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USSR Report

AGRICULTURE

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Moscow PRAVDA in Russian 20 Apr 84 p 1

/Article by A. Kucherenko, Odessa, Nikolayev, Kherson and the Crimean oblasts: "Spring Does Not Like To Wait"/

/Excerpts/ This year the workers in the southern regions of the Ukraine began sowing their feed mixtures, peas, grain and other crops almost simultaneously. Better preparations for the sowing campaign have been made on many farms than has previously been the case. As early as the beginning of February the equipment was lined up at the readiness line. The seed was prepared and the machine operators selected for double-shift operations all in good time.

The farms in Izmailskiy, Reniyskiy, Kiliyskiy and Tatarbunarskiy rayons were the first in Odessa Oblast to sow their early spring crops. Here the machines remain out on the tracts for 15-16 hours.

In order to fulfill the obligations undertaken for the fourth year of the five-year plan, many farms are relying upon an expansion in their corn sowings. In Odessa Oblast, for example, the area for this crop is being increased twofold.

Despite the fact that the weather last year did not indulge them, some kolkhozes in Baltskiy and Krasnooknyanskiy rayons obtained in excess of 50 quintals of corn from non-irrigated lands. Thus the problem is not simply one of weather, but rather a considerable amount of expertise is also involved.

This year corn is being grown by 900 mechaniced subunits. They have all converted over to the use of contracts and this has provided additional stimulus with regard to raising the cropping power of this crop. Recently the farmers in Baltskiy Rayon launched an oblast competition to obtain 50 quintals of grain from each non-irrigated hectare. Their initiative is being followed by many other farmers.

Masters of high corn yields are also to be found in other oblasts. This year the decision was made in Kherson Oblast to make more complete use of the experience of leading workers and to raise the gross yield of the amber grain to 700,000 tons. In Nikolayev Oblast the plans call for 760,000 tons to be obtained. Dozens of contractual teams engaged in growing corn have undertaken the obligation of obtaining no less than 100 quintals of grain per hectare and supplying the state's granaries with more than 250,000 tons.

In some areas the tracts of winter wheat have become thinned out. In Nikolayev Oblast the tending of this crop is being carried out depending upon its condition and development. Where necessary, a top dressing of nitrogen fertilizer is being applied.

Field work in the southern Ukraine has unfolded on an extensive scale. But in some areas, serious mistakes are being tolerated during the course of preparing for this work. In Shiryayevskiy Rayon in Odessa Oblast, for example, of 40 "repaired" tractor engines, 20 have turned out to be unsuitable for operation. The restoration of corn sowing machines has been dragged out at the Druzhba Sovkhoz in Tarutinskiy Rayon. At the Kolkhoz imeni Kotovskiy in Domanevskiy Rayon, Nikolayev Oblast, the containers were not prepared for applying fertilizer. Welding work had to be carried out and yet no specialist was available. Mineral fertilizers were not made available in a timely manner. The farm leaders and specialists turned for assistance to their partners -- Sel'khoztekhnika and Sel'khozkhimiya -- but these organizations offered only promises.

Spring, as is well known, operates on the basis of its own laws -- it will not wait.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

OVERVIEW OF SPRING FIELD WORK IN SOUTHERN UKRAINE

Moscow SEL'SKAYA ZHIZN' in Russian 17 Apr 84 p 1

/Article by A. Soldatskiy, Nikolayev and Kherson oblasts: "Counting the Hours"/

/Excerpts/ Express-telegrams reporting on the work of leading workers in the competition being held during the spring field operations are being received from field camps and from the workshop and central farmstead of the Sovkhoz imeni Shevchenko in Nikolayev Oblast.

The present period is a tense one for the oblast's farmers. Moreover, an unusual situation has developed: spring was expected to arrive from the south and yet it came from the north. When the grain growers at the Pravda Sovkhoz in Yelanetskiy Rayon reported having completed their sowing of early grain crops, the southern rayons had only just commenced sowing their peas. But the work tempo is high in all areas. The machine operators are striving to sow their spring crop fields as rapidly as possible. These crops occupy 276,000 hectares, an area that is considerably larger than usual. At the same time that the soil is being prepared for corn, the sowing of sunflowers and sugar beets is being carried out.

Distinct from many rayons in Nikolayev Oblast, the moisture supplies available in Kherson Oblast are lower than the norm and moisture, as is well known, is the foundation for the harvest. Thus each collective is striving to carry out its work in a rapid manner.

Multiple-purpose mechanized detachments have been introduced into operations at the Pobeda Sovkhoz. They include tractors with harrows and cultivators. They are preparing a front of work in a manner so as to ensure that the sowing personnel will be able to sow their seed in the soil in the absence of any extended disruption. The sowing machines are being followed by tractors with ring rollers. Practically all operations are being carried out simultaneously.

The Limanskiy Sovkhoz is relying heavily upon the use of irrigation. The water is being provided by storage-accumulators which were filled up during the autumn and winter periods. A portion of the land is being irrigated using water from the Dnepr River Estuary. An attempt is also being made to turn over the natural precipitation into the soil as rapidly as possible. In any case, an average of 35 quintals of grain must be obtained per hectare.

"A strong role must be played by corn" stated the chief agronomist for the sovkhoz L. Likhoshva, "One thousand hectares have been set aside for it. Eight teams have been created, six of which are operating on the basis of a brigade contract."

Experience has been accumulated at the sovkhoz in obtaining high corn yields. In 1983 the team headed by A. Lugoviy obtained 75.8 quintals of grain per hectare. This year a campaign is underway to obtain 100 quintals from each of 200 hectares. The team headed by A. Yervakov has been assigned 350 hectares of corn. This collective has promised to obtain no less than 80 quintals of grain per hectare.

Kakhovskiy Rayon is the largest producer of grain in Kherson Oblast. This year the farmers have vowed to obtain 200,000 tons of grain -- an unprecedented goal. A large reserve continues to be that of raising the efficiency of the irrigated lands, which occupy 25,000 hectares. The plans call for the yields to be no lower than those planned for each crop. This will furnish 100,000 tons of grain.

Spring field work is in full swing in the southern Ukraine. The majority of the farms in Kherson and Nikolayev oblasts have completed sowing their early crops in a rapid manner. And suddenly the rain came almost as if by order. Fine conditions have been created. The chief concern at the present time is that of sowing the late crops in a high quality manner, particularly the corn.

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SPRING FIELD WORK PREPARATIONS IN KURGAN OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 10 Apr 84 p 1

/Article by I. Shevchenko, agronomist, Kurgan Oblast: "Defining the Sowing Tactics More Exactly"/

/Text/ This year the agricultural workers in the Trans-Urals region must sow spring crops on more than 2.3 million hectares, including grain and pulse crops on 1.8 million hectares. All of their efforts are directed towards obtaining 19-20 quintals of grain from each hectare, over-fulfilling the plan for selling grain to the state and supplying animal husbandry with the required amounts of feed. The plans are tense and a great amount of work remains to be carried out.

To the credit of the Kurgan farmers, it bears mentioning that their work is constantly distinguished by a high technological culture and discipline and an innovative approach in carrying out their farming work.

It was precisely this feature which made it possible to uncover the talent of the experimental scientist and two times Hero of Socialist Labor T.S. Mal'tsev and to educate an entire group of production organizers who now are well known throughout the country. More than 10,000 specialists, clever technologists capable of obtaining high yields and an entire army of talented machine operators and grain growers are working in villages throughout the oblast.

This current spring period differs very little from previous ones and obviously from many future spring periods. Nevertheless, it has not succeeded very well in concealing the scars of last year's difficult autumn period. The seed has not yet been improved to the proper condition in all areas and the grain growers are commencing to warm and chemically disinfect the seed on a mass scale. The equipment also requires a great amount of attention and repair work. Although there are other difficulties as well, nevertheless it is expected that the Kurgan workers will overcome them in an honorable manner.

Tens of thousands of tractors, sowing machines, cultivators and other items of equipment have been restored to good working condition. The machine operators have undergone retraining.

Almost 8 million tons of organic fertilizer and 100,000 tons of mineral fertilizer will be "employed" in behalf of this year's harvest. The procurements and deliveries of these materials to the fields are continuing.

In the interest of obtaining high yields, the farmers have at their disposal this year fallow lands, other fine predecessor crop arrangements, regionalized grain crop varieties, an improved structure for the area under crops, a brigade contract and so forth.

The correct selection of the grain crop sowing periods is of great importance to the Trans-Urals region. Each year, many agronomists and farm leaders fear ending up with "wild oats" and thus quite often they wait too long for summer precipitation. As a result, they are late with their sowing and this often leads to a lengthening of the plant growing season and to late harvest operations during the period of autumn rainfall.

On the other hand, on farms where one third of the spring crops are planted during early periods (end of April to the beginning of May) and the remaining crops (16-25 May), high and stable yields are always obtained. The Zavety Lenina in Kargapolskiy Rayon, in the words of its chairman V.F. Pridvornyy, has accumulated 10 years of experience in such sowing, always has fine seed and is realizing a high overall cropping power. Here the harvest operations commence in late July and early August and early autumn plowing provides a reliable base for the future harvest. But the chief consideration, according to Vladimir Fedorovich, is the fact that the early sowings, especially during arid years, are always more productive than sowings carried out during the optimum periods. It has been this way seven out of the last 10 years. The kolkhoz is always the first in the rayon and in the oblast to complete its harvest operations and with a higher level of equipment productivity.

It is interesting to note that this year the oblast's farms, acting upon the initiative of local scientists, are displaying special concern for lowering the production costs for grain and feed and increasing the production of plant protein. They will make extensive use of hydrophobization for corn seed and foliar top dressings for spring wheat and they will intensify the campaign against weeds.

The goal -- to raise the productivity of the Trans-Urals fields.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

KRASNODARSKIY KRAY SPRING FIELD WORK, PROBLEMS DISCUSSED

Moscow SOVETSKAYA ROSSIYA in Russian 11 Mar 84 p 1

/Article by V. Udachin, Krasnodarskiy Kray: "Repair of a Field"/

/Text/ The communists attached to the second and third brigades at the Kolkhoz imeni Lenin in Kanevskiy Rayon gathered together for the purpose of discussing the plan for spring field work. Mechanics Yu. Vereshchaka and N. Fomenko reported that all of the equipment was prepared for movement out onto the fields. The distribution of forces was discussed thoroughly and the periods for sowing the spring crops and "repairing" the winter fields, taking into account the changing weather conditions, were defined more precisely.

The spring operations are already in progress on many farms. The farmers in Anapskiy, Krymskiy and Kurganinskiy rayons are completing their sowing of vegetable vetch. The machine operators in Slavyanskiy and Krasnoarmeyskiy rayons have sown their alfalfa. In the foothills zone the units have been moved out onto the fields and a fertilizer top dressing has been applied to the winter crop sowings from aircraft. Without delay and taking advantage of every opportunity, however slight, the machine operators in Kanevskiy Rayon are repairing their winter crops and they are being assisted in this regard by the high degree of readiness of the equipment.

Unfortunately, there are also shortcomings which are especially costly during the spring period, when each hour is of great importance. As yet, thousands of tractors, including many powerful ones, have still not cleared the workshops. The workers at enterprises of the kray's Sel'khoztekhnika Association are not fulfilling their obligations in behalf of the chief partner of the APK /agroindustrial complex/ -- the farmers. The tractors undergo repair work for periods in excess of the established norms. The plan for the first quarter for the preparation of complicated machines was disrupted.

Nor are the farmers in all areas prepared for spring. In Novopokrovskiy Rayon, only 14 percent of the barley seed is of 1st class quality and in Kushevskiy, Abinskiy and Apsheronskiy rayons -- only one half. At some sovkhozes the seed is stored together with forage grain and at the Kolkhoz imeni Kirov in Tikhoretskiy Rayon the sowing was begun before any attempt was made to rid the seed of pests. For this kray characterized by a high culture of farming, such mistakes are unacceptable. This also holds true for the seed shortages noted in a number of rayons, seed for regionalized varieties needed for the undersowing of winter crops.

Once again endless discussions are taking place regarding the shortages in fuel and lubricating materials. At the same time, the attitude being displayed towards these materials can in no way be described as thrifty. Instead of accumulating supplies of fuel for the spring, a number of kolkhozes and sovkhozes burn it in boiler furnaces, sell it to outside organizations and understate the quantities available in the records, thus creating an artificial shortage. The Kuban grain growers have been poorly served by the USSR Minneftekhimprom /Ministry of the Petroleum Refining and Petrochemical Industry/. The fact of the matter is that up until this year the Krasnodar and Tuapse petroleum refining plants produced Mark A-76 gasolene to meet the requirements of the kray. However, beginning this year the Krasnodar plant ceased production of this type of gasolene and the Tuapse plant began producing it in quantities which do not satisfy the requirements of even one Sochi resort. Thus it is hoped that the amount of gasolene required can be imported and yet even here a shortage is being experienced. Of those tank-cars which the Kuybyshev and Tambov administrations of RSFSR Goskomnefteprodukt should have shipped to the kray in January and February according to the plan, only one fifth of their number actually arrived.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

POTATO PROCUREMENT PLAN FULFILLED--Tomsk, 23 Sep--Yesterday snow fell on the Tomsk fields. But the inclement weather did not prevent the farmers at the Stepanovskiy Sovkhoz from being the first in the oblast to fulfill their annual plan for potato procurements. The Stepanovskiy Sovkhoz, which specializes in the production of potatoes and vegetables, has accumulated a great amount of experience in the cultivation of these crops in the zone of risky farming. /by A. Golub'yev/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 24 Sep 83 p 1/ 7026

SPECIAL CONCERN FOR SEED--Tomsk, 1 Nov--The oblast's farmers, having completed their grain crop harvest, are devoting a great amount of attention to making preparations for spring. A special concern -- the seed. The grain growers on leading farms carried out the procurement and sorting of seed simultaneously with their grain harvest work. At the present time, many farms in Pervomayskiy, Tomskiy and Shchegarskiy rayons are completing their seed processing work. The experience of the best sovkhozes and kolkhozes in making preparations for the spring operations is being employed extensively by other farms throughout the oblast. /by P. Chernov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 2 Nov 83 p 1/ 7026

VIOLENT WEATHER CONDITIONS--The weather was very confusing: in September -- snow and in November the catkins of violet willows burst into bloom. Even the weather forecasters could not recall such a warm autumn occurring in Kemerovo Oblast since 1946. And on the evening of 4 November a driving rain came down in torrents, accompanied by hail striking windows and flashes of lightning. This avalanche of cold air, which swept in from the Ural Mountains, overtook a front of warm air. The meeting was a violent one. It was as though autumn and winter were furiously arguing with one another: in some areas, gusts of wind tore away roofs, uprooted trees and toppled over two cranes at a mine. And the next morning the workers in Kemerovo Oblast were once again greeted by a warm autumn sun. /by V. Dolmatov/ /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 6 Nov 83 p 4/ 7026

GENEROUS AUTUMN--Gorno-Altaysk--The Altay range has already been covered by a deep layer of snow, there are 20 degrees of frost in the high mountain regions and yet golden autumn conditions continue in the Prikatun'ye region, at Teletskoye Lake and in the Biya River Valley. Globe flowers are blossoming out on the meadows and dandelions have burst forth into bloom. And would you believe it? Ripe raspberries have appeared on the bushes in November! Autumn

this year has been very generous with its forest gifts in the Altay region: it has been a good year for bilberries, red whortleberries, small cranberries and sea buckthorn. The procurements of cedar nuts are continuing -- an excellent harvest is at hand. The trade is being carried out by dozens of forestry enterprise brigades. Four hundred tons of nuts have already been shipped to the receiving points and to stores. One hundred tons of seed have been procured. The native inhabitants of the taiga are tirelessly laying away their food for the future -- squirrels, chipmunks and thick-billed nutcrackers. The bears have prepared their lairs for the winter and yet they appear to be in no hurry to rest -- they are gathering up cones and enjoying their fill of nuts. The cedar forest provides food for all of the taige wild life. The hunters are pleased: next year more sables, squirrels and other wild animals will appear in the cedar forests and the fur trade will be richer for it. /by V. Varvanets/ /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 10 Nov 83 p 4/ 7026

MOISTURE RETENTION WORK--Barnaul--"White plowing" is in progress out on the Altay fields. The kray's machine operators have formed snow banks on their first million hectares. The farmers know the value of moisture and have learned how to conserve it. Towards this end a large portion of the land was plowed in the autumn using the non-mouldboard method and with the stubble remaining. Windbreak rows consisting of sunflowers and corn were also planted on 300,000 hectares. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 20 Jan 84 p 1/ 7026

SNOW RETENTION WORK--Kurgan--The oblast's machine operators have commenced their snow reclamation work. This winter only a scanty amount of precipitation has fallen in the Trans-Urals region. Thus, instead of the usual snowplows, the farmers are using special packing units prepared in the workshops. They connect up to tractors multiple-runner sleds or large metal pans filled with ice. Such treatment of the fields tends to protect the snow from being borne away by the winds. /Text/ /Moscow TRUD in Russian 24 Dec 83 p 1/ 7026

EQUIPMENT REPAIRS, DELIVERIES--Kurgan, 9 Mar--Workers attached to the local Sel'khoztekhnika association provided assistance to the farmers in Ketovskiy Rayon, Kurgan Oblast in accelerating the preparation of the harvest equipment for this year's harvest operations. They modernized the combine repair workshops. A new and spacious department, equipped with the necessary installation equipment, was built. An expansion of the production area will make it possible to raise the quality of the machine repair work. In recent years the combine pool in Kurgan Oblast has been augmented by the addition of Niva, Kolos and self-propelled KSK-100 feed harvesting machines. The machine operators are making preparations to receive the highly productive Don combine. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 10 Mar 84 p 1/ 7026

SEED TREATMENT MEASURES--Last year the campaign aginst smut diseases in Orenburg Oblast became more active. This problem was discussed during a seminar and the station's specialists organized control over the timely and high quality disinfection of the seed for spring and winter crops. As a result of the measures undertaken, covered smut in wheat has been practically eliminated (it has been noted at only two of 540 farms). However, covered smut in barley has been detected in 10 rayons and the campaign against loose smut is still insufficiently effective, since the oblast is being supplied with

only limited quantities of disinfectants. Mention should also be made of the fact that the disinfection of seed is being carried out only under the control of the plant protection service and that the majority of the rayon agricultural organs are not devoting proper attention to this work. In behalf of the 1984 harvest, 660,000 quintals of winter crop seed have been disinfected. The disinfection of seed for the spring grain crops has been underway since December, with the equipment having been prepared for this purpose in a timely manner. The seed disinfecting work is being carried out by more than 2,000 individuals, all of whom had to pass a medical examination and receive training in accordance with a special program. /by V.I. Kondrat'yev, chief agronomist at the Orenburg Plant Protection Station/ /Text/ /Moscow ZASHCHITA RASTENIY in Russian No 3, Mar 84 p 26/ 7026

FIRST CLASS SEED--Orenburg, 28 Feb--The oblast's sovkhozes, created 30 years ago on unused lands, are preparing to celebrate the jubilee of the development of the virgin lands. During 3 years of this current five-year plan, many of them fulfilled four annual plans for the sale of grain to the state and are now striving to improve upon their success. Fertilizer has been brought in and noticeable progress has been made in the work of preparing the seed. For example, fine work was performed in this regard in Novoorskiy, Adamovskiy and Svetlinskiy rayons. Distinct from last year, there is practically no sub-standard seed here. For the oblast as a whole, the proportion of 1st class seed has been raised to almost 60 percent. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 29 Feb 84 p 1/ 7026

HUNGRY BEARS--A female bear and two cubs ran down the main street in the city of Yuryuzan, paying no attention to the astonished onlookers. A TASS correspondent asked a specialist to comment on the story told by those who witnessed this unusual event. "The appearance of a family of bears in a city is certainly an unusual phenomenon" stated the chief of the Chelyabinsk Oblast Hunting Inspectorate A. Matveyev, "But one can understand it happening during this present autumn period. There is a simple explanation: the year has been a poor one from the standpoint of mushrooms and berries. A hungry bear will not rest content in his lair, but rather he will boldly venture forth in search of food and a meeting with him could be dangerous. /Text/ /Moscow TRUD in Russian 26 Nov 83 p 4/ 7026

USING INDUSTRIAL TECHNOLOGY -- --Cherkessk, 18 Apr--The farms in the autonomous republic are applying a top dressing to and repairing their damaged winter crop sowings. The decision has been made to use only the industrial technology for cultivating the principal spring crops -- corn for grain, sunflowers, sugar beets, potatoes and soybeans. Taking advantage of each good hour of time, the mechanized teams and detachments are successfully carrying out their spring field work. The sowing of early grain and pulse crops has been completed. Work is commencing out on the sugar beet plantations. /by D. Daurov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 19 Apr 84 p 1/ 7026

HIGH QUALITY GRAIN--Krasnodar--This year in the Kuban region, for the winter grain crop sowings, more than 500,000 hectares have been set aside for obtaining grain of the highest quality. Of the overall wheat harvest, the plans call for 90 percent to be sold as strong and valuable varieties. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 7 Apr 84 p 1/ 7026

FIELD PREPARATION WORK--Nalchik, 16 Apr--Last year the corn growers at the Lenintsa Kolkhoz in Mayskiy Rayon obtained 78.6 quintals of grain from each of 1,000 hectares. This year the decision has been made to achieve a new goal. The foundation for the harvest was established in the autumn: the machine operators applied organic fertilizer to 400 hectares and mineral fertilizer to the remaining fields. At the present time, levelling off work is being carried out simultaneously with applying nitrogen fertilizers and toxic chemicals and conducting pre-sowing cultivation to the seed placement depth. The corn growers in Prokhladnenskiy, Urvanskiy, Terskiy and other rayons throughout the republic have commenced their spring field work. /by A. Konstantinov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 17 Apr 84 p 1/ 7026

IRRIGATION SEASON PREPARATIONS--Krasnodar, 9 Mar--More than 200,000 hectares have been prepared for irrigation operations on farms throughout the kray. This is almost twice as great as the figure for last year. Subunits of Glavkuban'risstroy and the Administration for Land Reclamation and Water Management of the kray executive committee and the land reclamation detachments of farms carried out their work of cleaning and repairing the intra-farm irrigation, collector-drainage and discharge network in a volume of more than 12 million cubic meters and they restored 15,000 hydraulic engineering installations to proper working order. Water supply irrigation was carried out on 24,000 hectares. All of the land reclamation work was carried out in a high quality manner. /by Yu. Semenenko/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 10 Mar 84 p 1/ 7026

COLLECTIVE CONTRACT OPERATIONS--Krasnodar, 13 Mar--Spring has arrived in the Kuban region. At midday the temperature rises to 15 degrees of heat. The farmers are observing the technological discipline and carrying out their soil cultivation work and the sowing of early grain and pulse crops and perennial grasses in an organized manner. The work of applying a top dressing to the wheat, hauling farmyard manure out onto the fields and repairing the winter crops is continuing. All operations are being carried out as part of an overall complex of operations. Typically, the quality of these operations is better than that for previous years. This is being promoted to a large degree by an increase in the number of teams, brigades and departments operating on a collective contract basis. At the present time, 1,700 elements are operating on this basis. /by Yu. Semenenko/ /Excerpt/ /Moscow SEL'SKAYA ZHIZN' in Russian 14 Mar 84 p 1/ 7026

IMPROVED CROPPING POWER--Krasnodar--The Kuban machine operators have commenced tending their vegetable vetch sowings. Acting upon the advice of scientists, the farmers planted varieties having different ripening periods on their fields. This will raise the cropping power and ensure uniform deliveries of the raw materials to the processing enterprises. /Text/ /Ashkhabad TURKMENSKAYA ISKRA in Russian 25 Mar 84 p 1/ 7026

SPRING FIELD WORK--Spring has raised the need for improving the work of the partners of the farmers. The deputy chairman of the council for the kray's agroindustrial association, M.M. Lomach, emphasized: "Our council has been in operation for more than a year. During this time, the relationships between all elements of the agroindustrial complex have been strengthened noticeably

and an increase has taken place in the role being played by the agricultural administration in solving production problems. The agronomists, engineers and mechanics are performing more efficiently this year than they have in past years. Better work is being performed by the kray's association of Goskomsel'khoztekhnika and improvements have taken place in the repair and deliveries of machines for technical servicing. Fifty thousand tons of mineral fertilizer in active agent have been allocated for the kray's farms in addition to the plan. Moreover, the chemical plants, the transport organizations and the subunits of Sel'khozkhimiya are accurately carrying out their obligations. Efficient work is being performed by subunits of USSR Minzag /Ministry of Procurements/ in exchanging forage grain for seed grain. The work of supplying the kolkhozes and sovkhozes with fuel and lubricating materials has improved. The kray's farms are doing everything possible to protect for the harvest operations the planned area for grain and pulse crops -- 2,350,000 hectares and to obtain a high yield from each such hectare. Peas and barley are being used for an undersowing of the winter crops and a portion of the sowings will be restored later using corn. In the interest of carrying out the resowing of the winter crops in a more rapid manner and in order to utilize the spring moisture more fully, the Kuban workers are using water-repellent corn seed on 60,000 hectares. Approximately 3,000 sowing units have been moved out onto the kray's fields. The roar of motors continues unabated even during the dead of night in the Kuban Steppe, awakened by spring. /by Yu. Semenenko/ /Excerpt/ /Moscow SEL'SKAYA ZHIZN' in Russian 21 Mar 84 p 1/ 7026

RICE SOWING COMMENCES--The sowing of rice has commenced in the Kuban. The machine operators in the Taman, Priazovye and other rice growing regions have moved their sowing machines out onto the irrigated lands. April sowings, as experience has shown, enables the farms to tend their crops more efficiently and they also shorten the periods for the ripening and harvesting of the crop. /Text/ /Moscow PRAVDA in Russian 16 Apr 84 p 3/ 7026

KUBAN GRAIN PLAN--Krasnodarskiy Kray--This year the Kuban farmers have resolved to obtain no less than 37 quintals of grain per hectare and to sell 4,315,000 tons of grain to the state. A great amount of work remains to be carried out if they are to hold to their word: many difficulties were created out on the kray's winter crop fields during the autumn and winter months. The extended period of dry weather in some areas has almost turned the arable soil layer into stone. But the caprices of nature have not ended. At times frosts and at other times -- warm weather: many winter crops perished and undersowings had to be carried out and fields repaired. Later there were dust storms which also caused considerable harm to the crops: The farmers have many concerns. And in order to be able to overcome these quirks of nature, one must display both skill and knowledge. There are many such experts in the Kuban. The level of management, it was emphasized during a recent all-union economic conference on the problems of the agroindustrial complex, is greatly dependent upon the skilful use of the chief means of production -- land. An important campaign has just been launched in the Kuban: the conversion over to zonal farming systems involving the use of scientifically sound crop rotation plans. Each zone will have its own varieties, soil cultivation methods, fertilization system and methods for combating weeds and plant diseases. The sowing of early crops has already been completed in the Kuban. Next in line -- the sowing of the main spring crops: sugar beets, corn, sunflowers, rice. At the same time, the winter crop fields are gaining in strength. /by V. Mel'nikov/ /Excerpts/ /Moscow TRUD in Russian 29 Mar 84 p 1/ 7026

WINTER CROP SOWINGS--Ordzhonikidze--Yesterday the farms in the North Ossetian ASSR commenced their mass sowing of winter crops. The plans call for the autumn sowing work to be completed in just 2 weeks. /Text/ /Moscow TRUD in Russian 18 Sep 83 p 1/ 7026

EARLY SPRING CROP SOWINGS--Ordzhonikidze, 31 Mar--The farmers in the alpine zone of the central Caucasus region have commenced their mass sowing of early spring crops. Peas and oats mixtures, oats for grain and green feed are being planted in the soil. This season a great amount of attention has been given to forage crops -- rape and soybeans, which furnish high fodder yields in foothills regions. The farmers have just 80 hours in which to sow their early spring crops. Time can be saved through the group use of equipment, double-shift operations for the machine operators and through the introduction of a collective contract. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 1 Apr 84 p 1/ 7026

ONLY FIRST CLASS SEED--Ordzhonikidze--This year the cron growers in the North Ossetian ASSR are using only 1st class seed in sowing the republic's fields. The calibration plants have prepared for the kolkhozes and sovkhozes more than 10,000 tons of seed for highly productive and regionalized varieties. /Text/ /Moscow TRUD in Russian 4 Apr 84 p 1/ 7026

CORN SOWING COMMENCES--ORDZHONIKIDZE--The farms in the steppe regions of the North Ossetian ASSR have commenced their sowing of corn for grain. An important sign of this busy period -- an expansion of the zone for the cultivation of this crop using the industrial technology. It will be cultivated using this progressive method on the entire area of 52,000 hectares. The corn is being grown on ridges for the very first time on many farms and this will accelerate considerably the ripening of the ears. The mechanized teams, brigades and detachments are operating on the basis of collective contracts. /Text/ /Moscow IZVESTIYA in Russian 18 Apr 84 p 1/ 7026

LIVESTOCK FEED PROCUREMENT

ARMENIAN MINISTER INTERVIEWED ON FEED, EQUIPMENT DEFICIENCIES

Yerevan KOMMUNIST in Russian 21 Mar 84 p 2

/Interview with R. Shakhbazyan, Armenian SSR minister of procurement, by A. Altunyan, KOMMUNIST correspondent: "With Due Regard for the Future"; date and place not specified/

> /Text/ For a number of years the activity of the enterprises of the Armenian SSR Ministry of Procurement has been subjected to just criticism. What is being done by the ministry's management to eliminate existing shortcomings and to fulfill the tasks set by the May (1982) Plenum of the CPSU Central Committee and the July (1982) Plenum of the Central Committee of the Communist Party of Armenia is discussed in the interview with R. Shakhbazyan, the republic's minister of procurement, by A. Altunyan, KOMMUNIST correspondent.

/Question/ Rafik Tatevosovich, the operation of mixed feed plants, which continue to deliver nonstandard products to farms, gives rise to especially many reprimands. What is being done to improve the quality of mixed feed?

/Answer/ Naturally, the just reprimands addressed to us for many years cause great anxiety and we cannot ignore them. At present we attach paramount importance to the problem of the quality of mixed feed and have seriously begun a fundamental improvement in the quality and a rise in the level of production of mixed feed. In this connection it has been decided to reequip mixed feed enterprises in Yerevan, Spitak and Sevan and to partially expand the plant in Tallinn. Subsequently, these enterprises will specialize in the produced assortment. For example, Yerevan and Tallinn mixed feed plants will produce concentrated feed for poultry, hogs and fish and Sevan and Spitak plants, for cattle, hogs and fish. Incidentally, work on the reconstruction and improvement in production technology has already begun at the Yerevan Mixed Feed Plant.

Reequipment will also be carried out at the ministry's other enterprises. Furthermore, the construction of small mixed feed enterprises near large animal husbandry complexes is envisaged.

For the purpose of improving the quality of mixed feed plans are made for an extensive utilization of products of lysine production and other components rich in protein and albumin. We also pay much attention to the equipment of production laboratories. Systematic educational work aimed at a rise in labor and performance discipline is done, because, ultimately, the end result, that is, the quality of feed, depends on a strict observance of formulas and a careful attitude toward raw materials.

The irregularity of deliveries of mixed feed in the required assortment, especially by the enterprises of Armptitseprom /Armenian Poultry Raising Industry Administration/, gives rise to big reprimands addressed to us. To solve this problem, we have taken specific measures. A great deal still must be done. However, this problem will be completely solved by us in 1984. In particular, we have succeeded in attaining a prompt and systematic delivery of components necessary for the observance of feed formulas. The republic's farms should give us specific assistance in this. Before the beginning of the year they must submit claims for the delivery of mixed feed in a detailed assortment in accordance with the allocated funds.

/Question/ The reconstruction and reequipment program outlined by you is quite broad. Is the ministry able to implement it within the proposed short time, that is, within the next 2 years?

/Answer/ Completely. For example, the technological equipment of the mill of the Spitak Grain Product Combine, which failed to deliver more than 150,000 tons of high-grade meal in the last 4 years alone, was reconstructed during 3 months last year. Owing to the work done, the mill now produces 300 tons per day instead of the previous 217 tons and the output of superior-grade meal has increased from 4 to 20 percent. This has not only helped to meet the needs for high-grade meal, but has also eliminated cross hauls.

For a successful fulfillment of what has been envisaged, as well as for a further improvement in the operation of our enterprises, on our initiative a scientific-production association has been established at the base of the ministry's small cost accounting enterprises. Its task is to increase the efficiency of introduction of scientific research, to improve the quality of work on the development and introduction of automated management systems and automated systems for the management of technological processes with the use of the latest computer equipment, to automate and mechanize technological processes, to increase the efficiency of scientific labor organization and to perform high-quality analyses of the raw materials received and products turned out.

Various subsystems for the sector's management are now being developed at the information computer center of the Scientific Production Association. The solution of such problems as the preparation of grinding batches, calculation of mixed feed formulas, compilation of balances for the supply and distribution of raw materials, drawing up of production plans and so forth are the most important from the point of view of optimization. The output information of the problems solved enables the ministry's administrative staff to adopt more efficient decisions during planning and management. For example, the

use of computers during the calculation of mixed feed formulas made it possible to more efficiently utilize scarce types of high-protein raw materials and to increase the output of biologically high-grade mixed feed.

The Scientific Production Association jointly with the Institute of Microbiology of the republic's Academy of Sciences carries out work on the utilization of products of lysine production, a liquid concentrate of lysine, aminobacterin and other components in mixed feed production, which will make it possible to increase the content of protein and albumin and will save grain, as well as scarce fish and meat-bone meal. Planning-technological documents for an installation for the introduction of a liquid concentrate of lysine and other components into mixed feed are now being developed. This installation will be introduced at the ministry's enterprises in the very near future. The economic effect of this work in the sector's enterprises alone is about 4 million rubles annually. At the same time, more than 30,000 tons of grain are saved annually.

/Question/ The reequipment of enterprises will require the presence of highly skilled specialist personnel.

/Answer/ Undoubtedly. Unfortunately, we are acutely short of such personnel, especially engineering personnel. For example, they are very needed at the plants in Spitak, Sevan and other places. In order to solve the personnel problem, we have turned to the country's leading higher educational institutions, which train specialists in the technology and processing of grain. We have come to an agreement with the Yerevan Polytechnical Institute about sending students working on diploma projects to our enterprises so that after graduation from the higher educational institution they may be placed at the ministry's disposal.

In brief, we are facing big tasks and we are doing everything to accomplish them successfully and to make our worthy contribution to the realization of the Food Program and of the decisions of the 26th CPSU Congress.

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LIVESTOCK FEED PROCUREMENT

USE OF MICROBIOLOGICAL TECHNOLOGY IN PROCESSING FEED RESOURCES

Minsk SEL'SKAYA GAZETA in Russian 16 Feb 84 p 2

[Article by S. Romanov, scientist-secretary of the Institute of Microbiology of the BSSR Academy of Sciences, candidate of biological sciences under the rubric The Protein Problem: Ways of Solving It: "Designer" of Feeds at a Complex:]

[Text] This relationship is well known: to increase the production of animal husbandry products the production of feeds has to be increased even more. However, the same problem may also be solved differently: by qualitative improvement of feed. The present shortage of feeds is based precisely on the cost of quality feeds.

What is good feed? It is a scientifically based mixture of nutrients, including proteins, carbohydrates, minerals, vitamins and so on in optimal proportions. That is, good feed is mixed feed. Our mixed feed now is far from ideal. First of all, forage grain and then grass, fish and meat-and-bone meals, bagasse, oil seed, meal, cakes, bran, protein-vitamin concentrates, and premixes. How great is the role of such additions? The addition of only 5 percent quality grass meal to mixed feeds would effect a savings of about 3.5 million tons of grain a year in the country. Replacement of only a part of the mixed feeds with a microbial protein-vitamin concentrate would produce an even greater effect due to the improved protein content of the product. It is believed that the basic composition of feeds in the republic should consist of 50 percent grass feeds, 30 percent--grain and over 10 percent yeast and other additions. But, these additions are becoming increasingly more critical with each year.

How great is the potential for increasing their production? The basic raw materials for feed yeast cultivation are petroleum hydrocarbons and hydrolysates of vegetative raw materials, timber by-products, corncobs, sunflower husks etc. Production of protein-vitamin concentrates based on petroleum paraffins is profitable at large enterprises, such as the Novopolotskiy BVK [Protein Vitamin Concentrate] Plant. It is expedient to build more hydrolytic feed yeast plants. Modern biotechnology, that is microbiological processing, is capable of transforming not only petroleum and sawdust, but other raw materials into an excellent feed: top peat, flax chaff, straw... But, as the saying goes, the hands have not gotten around to it as yet.

But, straw is used efficiently. There are dozens of ways to process it for feed, so that those 30-40 kilograms of protein and 10-20 kilograms of fat, contained in a ton of straw, become more accessible to the animals. It is true that this protein and fat are not of a very high quality. But, from those 400 kilograms of cellulose contained in a ton, ruminating animals are able to make another dozen or so kilograms of protein. However, this protein is microbial, close to animal protein in composition.

There are also agricultural raw materials which seem to be usable without any processing--just keep them coming; beet bagasse and fruit pressings, distillery mash residue and potato pulp. But, the trouble is: more is needed because in that ton of distillery mash residue there is 8 to 12 percent dry substance and only 1 percent protein. There is even less protein in beet bagasse and potato pulp.

In microbiological processing the raw materials containing cellulose are first sugared, usually at a raised temperature and pressure. Mineral acid does not have to be used for this, distillery mash residue may be used as it contains organic acids. Yeast, which is a microscopic fungus, grows on the hydrolysates, that is sugar solutions. These fungi are edible or, let us say, good for feeds. That is, for feeds that are already nutritious. With microbiological processing it is possible to obtain 150 kilograms of yeast from 1 ton of straw, a ton of peat or timber by-products will yield 200 kilograms of yeast, and distillery mash residue--60 kilograms. The proportions of protein and sugar may be adjusted.

All these raw materials belong to the category of local materials and, as a rule, are concentrated in relatively small quantities at the production or processing sites, with the exception of peat. Is it economically profitable to transform straw from a kolkhoz field into feed yeast and sawdust from a local sawmill into feed sugar at the Glavmikrobioprom [Main Administration of the Microbiological Industry]. To transport straw for such distances is almost the same as transporting air. But, to transport distillery mash residue or juice waters from starch production--this is transporting water literally. In addition, the product has to be delivered to the user. Just think how much transport and fuel are needed for this! And, the user of the feeds, as a rule, is a large interfarm livestock complex. In the complex region there is not only one, but several types of raw material, suitable for processing--straw, timber by-products, distillery mash residue, if there is a distillery, and others. But, the biotechnology of their processing is different. And, for this reason, a specialized microbiological enterprise is specialized because it works on a limited number of raw material types and technologies.

Thus, on one hand, there are various by-products available in large quantities that, if used for the feeding of animals, are inadequate. On the other hand, their usefulness as feeds may be improved by microbiological processing. How

does one make the game worth the candle so that expenditures are low enough and such production is profitable, and the produced product is of satisfactory quality?

Such a solution exists. It has been offered by the specialists of Glavmikrobioprom of the USSR Council of Ministers. The solution appears simple, like a child's building set.

For each technology a typical, extremely simple to maintain plant is built--a module. For example, a module for hydrolysis of straw with distillery mash residue, a module for the production of yeast based on hydrolysis of sawdust, etc. Modules, corresponding to local conditions, are combined into one plant. In essence, this is similar to playing with blocks. One can set up production that makes maximal use of local raw materials. If a given economy has more opportunities to obtain distillery mash residue--then, the number or the capacity of modules of this type is increased. But, if somewhere there are large quantities of peat or timber available--a corresponding module is added. The linking module may be a methane tank, processing manure of the livestock complex into biogas and fertilizer. Biogas is good for generating steam in technological modules, and the relatively low temperature exhaust is good for heating hothouses. Thus, microbiological production, built on the module principle, will render all processes wasteless and will "link together" all agricultural production processes related to servicing livestock complexes.

It has been suggested that the first such plant, named "Biomoduli", be built at the "Demekhi" sovkhoz in Rechitskiy rayon of Gomel Oblast. This is a very convenient site for an experimental plant. A user is available--a livestock complex for 5,000 head. One and a half kilometers away from the complex is a distillery which supplies the complex with 200 tons mash residue daily. The Richitskiy Hydrolytic Plant of Glavmikrobioprom is located 15 kilometers from the sovkhoz. There are timber processing enterprises in the immediate vicinity and even on the land of the sovkhoz itself. On the whole, 500 tons of commercial feed yeast based on local raw materials may be produced annually at the "Demekhi" biomodule. This exceeds the needs of the livestock complex itself.

In principle the assortment of feed additions may be expanded with the introduction of biomodule plants. A biomodule not only makes accommodations for the raw materials, which change depending on local conditions and season, but allows for different utilization of the production output. Feed yeast in the form of a suspension may be fed immediately or stored after drying. During the pasture period sugared by-products may be used for silage, at which time the conditions are quite favorable for the formation of lactic acid

bacteria. But, during the stalling period when animals are kept in stalls, a hydrolysate is supplied to the feed mixer and the liquid feed is fed directly to the cattle.

A positive feature of biomodule plants is the sharply reduced proportionate expenditures for energy sources with production of a ton of marketable product, primarily, because a module may use a liquid product immediately. At biomodule plants there is no need for a sewage treatment plant, whose cost in the microbiological industry constitutes on the average a quarter of all capital expenditures. Expenditures are reduced for warehouse facilities and there is less demand for metal and other materials in short supply. A livestock complex becomes less dependent on mixed feed deliveries from a center.

Taking into consideration both production and consumption of nontraditional raw materials, specialists of Glavmikrobioprom have determined that 800,000 of feed yeast and 200,000 tons of feed sugar a year may be produced from the raw material in Belorussia. This exceeds by two-fold the livestock breeding needs of the republic. According to the computations of BeLNIIP [Expansion Unknown] of the BSSR Gosplan, in 1985 an additional weight gain of 180,000 tons of pork may be produced in the republic. To do this, 50 plants of the "biomodule" type have to be built, and the cost of their construction should pay for itself in less than 2 years.

As yet not all the scientific, designing and planning problems, related to building biomodule plants, have been solved. Some features may be worked out at the first experimental plant, others require a speedy solution in the laboratories of scientists and behind the drawing boards of designers. Work at such a plant assumes the utilization, not only of chemical (hydrolysis) technologies, but of microbiological technologies--cultivation of yeast, microfungi, on hydrolyzed material or on a raw material processed in some other way. Or completely unprocessed raw material. In principle such technologies do exist. But, they have to be extremely simple so that the process may be controlled by an operator, trained from a number of local people. The produced product should be harmless, even if feed production technology is violated. These and other problems, certainly, have to be solved by all interested organizations.

But, is it profitable for all organizations, generally considered to be interested, to build such plants? For those who receive nutritious feed additions from coarse "nonfeeds" and use them themselves--it seems profitable. At least, the calculations that have been made are convincing. Notice, that the idea as to what constitutes a product at these plants is somewhat vague. This may be a peat hydrolysate, straw fermented with fungi or commercial yeast. The regularity of plant operation depends first, on needs of the complex, second, on the nature of incoming, local unplanned raw material, and finally, on the responsibleness and business qualities of the service personnel and management.

In our opinion, Glavmikrobioprom should sell the plants themselves, that is the planning estimates together with the plant for a specific livestock complex and technology. Not only should they sell the regulations and standard documents, but "know-how"--practical fine points of a technology, without the knowledge of which realization is difficult in practice. This may be done by training operators at courses in an actual biomodule plant, for example, in "Demekhi". The cost of such a package (planning estimates, technological and standard documents, "know-how" etc.) should include not only the direct expenditures for their development, but also a proportional share of the expenditures for scientific research and experimental building studies in the development of these plants. Then, the more plants there are built, the smaller the cost of each share will be and the higher the profit of such a plant system, both for agriculture and Glavmikrobioprom.

Of course, in speaking about all this, one should not lose sight of the fact that, first, to produce feed from crop production by-products, crop production itself, which was, is and will be the main fodder base of livestock, has to be developed. Moreover, efficient management of crop production ensures a reduction of precisely those by-products, which form the basis of the proposed protein and carbohydrate feed production, for example, straw. Geneticists and breeders are striving to obtain grasses with short stems, resistant to being beaten down, and to increase the amount of grain in the total biomass of a plant. Increased crop production leads to a direct reduction of feed shortages.

But, protein and carbohydrate additions are needed so that a large part of the crops would not become by-products in the form of straw, chaff, etc. and a large part would not become manure due to nutrient imbalance. And, finally, one of the best variants--is to obtain them from the nonfeed part of crop products. The problem is to have everything that is grown in the field be used as food or feed for livestock, and then have a maximal conversion of the feed to food products. This problem may be solved by biomodule plants at livestock complexes.

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LIVESTOCK FEED PROCUREMENT

EXPERIMENT IN INTENSIVE FEEDING OF YOUNG ANIMALS

Kiev RADYANS'KA UKRAYINA in Ukrainian 8, 9 Feb 84

[Article by A. Kraslyans'kiy, RADYANS'KA UKRAINA special correspondent, Zhitomir Oblast, in the column "Food Program: Roads to Success": "The Korosten' Experiment"]

[8 Feb p 2]

> [Text] This variant of animal feeding was developed by scientists some time ago, yet it is still strange to observe 6-month old calves eat heartily and even greedily not succulent hay or combination silage but ordinary straw, just brought in from the haystack. This was also observed in other places where larger bulls and cows were kept. The director of Friendship Kolkhoz, Vasyl' Yakovych Ben', pointed to another group of young animals who were fed, as an experiment, only "cultivated" food--silage, feed beet, and haylage. Outwardly it did not appear any better than the former. And as for weight gain, it was lower in the "privileged" group. Concerning this fact, Vasyl' Yakovych said: "You are not the only ones who are amazed. Until they see for themselves, even specialists are skeptical of our success with this innovation. And even some scientists doubt it, excluding, of course, those, who along with us, introduced the innovative method of feeding....

Vigorous Growth

Nature is beautiful in Korosten'. From end to end luxurious forests spread out, rich in mushrooms and berries and criss-crossed by rivers and brooks. Here and there blue lakes appear. In the river valleys, as soon as spring comes, the meadows begin to bloom.

These are pleasant places in which to rest. But when it comes to farming and its main instrument--fertile productive land--mother nature revealed herself to be not so generous. It is enough to mention that according to the existing cadaster, Korosten's soil rates has only 20-25 points on the fertility scale, while the soil in chernozem rayons rates 60-70 points.

That is why the young managers of the rayon, led by the raykom's first secretary, V. V. Shafranskiy, who accepted the management of the complex farm enterprise a few years ago, had something to think about--How to manage the enterprise in the future? How to carry out the requirements of the Food Program?

Now that the rayon has stabilized the rate of annual increase in milk and meat production and has begun to keep up with state plans, everything seems clear and simple, even though unresolved problems still remain. However, before the outlines of the future growth took shape, it was necessary to hold frequent meetings with the best specialists of the village, to consult with scientists, and to calculate and recalculate.

We reasoned this way: Since the natural fertility of that soil was low, it was useless to hope for a fast rise in economy based on the cultivation of land. Realistically, quick results could be obtained by raising livestock and, above all, by meat production.

After defining the problems demanding essential energy and resources to obtain the fastest possible results from intensive feeding, we planned the following: to raise the general level of animal husbandry and especially to improve the conditions of cattle maintenance; to improve plant breeding; to attain a higher yield for every hectareof meadow, pasture, and plowed field set aside for feed production; and to introduce modern methods of procuring and storing feed and of feeding the livestock.

The calculation was accurate and, as it now appears, correct. Even so, there were still problems ahead and the main one of these was feeds. Livestock fattening, as every farmer knows, produces good results only when it is carried on intensively, that is, when rapid growth of the animal is assured on the basis of high-quality feeding from the earliest period of life, when, as is well known, the most vigorous growth is observed. This fact is poorly utilized in farming. Virtually months pass without benefit to the fattening up process, until the calf's body matures enough so that instead of milk it can be given other feeds to insure rapid weight gain.

The cattle-breeders of Korostenskiy Rayon, relying on the research of Scientific Research Institute of Agriculture in the non-chernozem zone of the UkSSR and the Southern Department of the Order of Lenin All Union Academy of Agricultural Sciences imeni V. I. Lenin (VASKhNIL), decided not to wait until the calf was ready for intensive feeding but hastened the process themselves by inserting, from the first few days of life, stomach contents [kanyga]--the contents of the rumen of the stomach of a mature bull. Experience demonstrates that this material hastens considerably the fermentation of microflora of the calf's stomach, which sharply increases its appetite allowing a vigorous use of coarse feeds, including straw, at a much earlier age. In addition, it was discovered that the stomach contents, as they act beneficially on the calf's stomach, strengthen its body, increasing its resistance to disease.

"Earlier, 25 calves died in each of our facilities," says Vasyl'Yakovych Ben'. "Had we been able to save and raise them, we would have received 25-30,000 rubles of profit. Now there are practically no losses. And that is because we do not give medicine and herbal tinctures."

I wish to stress that the system of feeding cattle proposed by scientists was tested in practice more than once at separate farms. But this is the first time that it has been introduced in practice on such a large scale as an entire rayon. One had to take certain risks (new ideas always conceal surprises in themselves), one had to trust the work-up, and finally, one had to have the constant support of the scientists in order to decide on such a large-scale experiment.

While striving to raise healthy and strong young stock and to accustom it earlier to coarse feeds, the specialists were trying to solve another problem: They searched, along with the scientists, for feeding portions based on the realistic possibilities in the Korostin'area' that is, on crops that are most plentiful in the region and at the same time which would produce a good weight gain in the animals. Experience showed that if straw, not to mention hay, was soaked with a solution of mineral additive--urea, and if a little concentrated feed was added, the effectiveness of the feeding would be high.

This is the same feed the calves were devouring at the farm in the incident described at the beginning of the story. It is the same portions which are fed today to thousands of head of cattle.

"I have worked 30 years on the farm," says one of the most competent milkmaids of the Kolkhoz imeni Dymytrov, Halyna Vitaliyivna Skoroda, "and I have never seen cows eat straw."

"Not only straw," her colleague Yevgena Yakivna Prokopchuk interrupts her conversation. "Once they brought sedge and some sort of pot-herb grasses from the swamp, they ate everything to the last leaf. And see how the cows and bulls glisten, they are so fat."

Vasyl' Yakovych Ben' commented on the change in the livestock's "mood" in this way: "And what is so surprising here? A cow, as we know, is an herbivorous creature. Where have you ever seen in the past that a farmer fed one with bread? It is only necessary to condition it to eat various coarse feeds, which, as a matter of fact, we are doing."

What you heard is, so to speak, only the emotional side of the matter. Here is what economic calculations show based on the example of the same Friendship Kolkhoz. Having changed to the progressive techniques of maintaining and fattening animals, the farm, for the first time in all the years, became profitable: it made a net profit of 400,000 rubles. Today the average weight gain in the calves throughout the farm is 600 gm, but calves raised by such masters in this business as M. I. Turovs'ka, L. S. Kondratenko, V. P. Omelyashko, H. P. Iskra and others have reached 700 gm and even higher weights. The prime cost of each quintal (100 kg) of weight gain, in comparison with the old method, decreased 24 rubles. The outlay of feed for each quintal of weight gain, using the old method, reached 9 quintals (900 kg) of feed units, now it is 4.8 quintals. Thanks to the introduction of this system of fattening animals, the farm decreased its purchase of concentrated feed from the state from 2,200 tons a year to 1,300 tons.

And there is another important gain. Formerly, it took 30-32 months to raise a calf to 400 kg of weight before selling it (and this is precisely what the Korosten' stock-yards are approaching). Now it takes nearly 20 months. How

much additional meat it is now possible to give to the state through rational utilization of the advantages of the new method of feeding, how much economy of effort and resources, and all this, we repeat, by using modest local feeds....

[9 Feb p 3]

[Text] The Dream of a Sky-Blue Floor

We will not simplify: Mastery of a new technology is not the final result, it is only the instrument to future gains. For even the solution to the problem of optimally balanced feeds, based on local conditions, does not exclude the great effort involved in the procurement of the feeds in ample quantities. Even the convincing achievements of one farm is only a small achievement on the scale of, let's say, a rayon. First Secretary of the Korosten'skiy Party Raykom V., V. Shafranskiy says: "This advanced method of intensive feeding of cattle (fattening up) gives us a good opportunity, given the conditions which exist in Poless'ye, to carry out the goals of the Food Program. The party raykom and all the Communists in the rayon have done a great deal to affirm the new and to break old impressions and habits in this matter.

Progressive methods of intensive feeding can produce desirable results only under conditions of a generally high level of animal husbandry, starting with the preparation of feeds and ending with cattle maintenance and the best possible labor conditions for the people."

One can believe what lies behind the first secretary's words, particularly about establishing a high level of livestock husbandary, by visiting any village, even one not well known like Ushomyr where the Friendship Kolkhoz is located and where the above-mentioned advancement was conceived. Take the case of such a matter as how to save calves (reduce their mortality rate) at a very young age. Today, in such kolkhoz's as For Communism imeni Dymytrov and, for that matter, all the rest where calves are raised, the problem of saving every young calf has been solved. The new method of feeding mentioned earlier, undoubtedly, contributed to this fact. But in addition to this, a huge undertaking was completed on the rayon farms to provide the best conditions for calf maintenance. Ammonia vapors, for example, seem to have a very harmful effect on cattle, particularly on the young stock. On rayon farms in Korosten' they began to install ventilators along the walls. However, they soon realized that they did not provide the desired effect, since ammonia is heavy and settles in the bottom. The ventilation system was then redesigned: now it is found below the floors, under the grating. Now the air composition on the farm differs very little from that found outside.

The following scientists, Candidate of Agricultural Sciences S. T. Perehonchuk, and academicians L. K. Ernstom and G. O. Bogdanov, instituted another innovation. Since most of the calf's life is spent inside and the absence of the sun's rays has a negative effect on their health; over each of their cages they have hung special lamps from which continuously pour infra-red and ultra-violet rays. Unusual cleanliness, stable temperature, and exemplary care--this is what, in addition to everything else, helps to sustain such a high number of young stock and promotes its rapid maturation and weight gain.

There is one other feature of the Korosten' experiment. In order to equip the farms with the newest technology and to arrange the best conditions for the care of cattle, it was necessary to substantially rebuild the physical structures. But at whose expense, since as was stated already, formerly the livestock husbandry branch did not have profits of its own? This acute question stood before the rayon specialists and managers. Quite a few voices were heard in support of taking a loan from the state and then gradually paying it off after the building is completed. However, the rayon Communists said firmly: "We will conduct the farm reconstruction on our own power, the people's way of building."

Everyone rallied around this cause: rural workers, rayon organizations, and industrial establishments. There were joint subbotniki and genuine worker patronage over the building of the village. The RAPO Council (Rayon Agro-Industry Association) effectively coordinated the energies of the partners and gathered them for this important cause.

The work is not yet completed. And not everywhere is the effect of what is being done felt. But with every passing day it is more visible.

Last year the farms in the rayon fulfilled ahead of time, before 1 December, their state tasks for production and sale of meat.

The dairy branch followed the cattle fattening branch--innovation, understandably, touched it also. For the first time in all the years, the workers of Korosten' also fulfilled ahead of time their annual quota for the sale of milk. Moreover, the quality of milk they deliver is first rate and their center of export of dairy products is the best in the oblast.

Not farms but small towns for raising livestock are appearing today in the villages of the rayon, with decontamination centers, laboratories, shops where unskimmed milk separators operate, and refrigerators. Almost everywhere there are paved sidewalks, parks, and paths.

The collected energies offered new possibilities to provide a person with all he needs. On all the collective farms, recreation facilities at the little towns where livestock is raised are decorated in home-like comfort, neat with attractive furniture, televisions, and movie projectors. Of particular concern, rayon and farm managers stressed, was the feeling that each farm should have its own sauna--not some converted room for this purpose but a separate one with access to the outside, with first rate furnishings and an obligatory pool.

Touring such a little castle at the village Kovali where a beautiful bath-house was situated, RAPO Council Chief S. M. Zhidetskiy unfolded a whole future perspective for the development of a place for raising livestock at the Kolkhoz imeni Chapayev.

"Here," pointing to the pond which was specially dug near the farm, "on the slopes we will plant a park and stock the water with fish. We will have paved sidewalks everywhere so that people would even forget about their rubber boots, which for some reason have become an indispensible attribute of a milkmaid or a forager."

Having brought them to the hall of rest (he even used the word "hall") which consisted of two rooms, Stanislav Mykolayevich halted in the first one, where the walls were already adorned by two large panels with easily recognized native landscapes of Kovali.

"We are dreaming of placing here a room for psychological relief," said Stanislav Mykolayevych. "You see, one wall is made of real birches. In the corner grass will grow, a brook will splash, birds will sing. The floor will definitely be sky-blue. Do you hear," turning to the farm managers and builders who were standing to the side, "definitely sky-blue. Let it remind us of a sky at dawn. So throw out this red paint which you brought with you. A person should relax here after work, set aside emotional and physical tensions, charge up with new energy. And here," moving to the next room," one can drink tea, watch television, or listen to a good lecture...."

When the whole farm was inspected and all were introduced to his views, Stanislav Mykolayevich, as if looking for support, turned to the deputy chief of the kolkhoz, A. S. Rudynytskiy: "What is the situation with personnel? You were short of people not long ago."

"They are returning from the city," Anatoliy Stepanovich joyfully replied, "there are so many applications at the farm that we cannot accept them all. And in general, Kovali is coming to life before our very eyes."

"This is a typical process for the entire rayon," summarized the RAPO Council chief. Somehow a new life is beginning in the villages, along with the stormy growth of livestock husbandry. People are returning to them from the cities and to various rayon organizations."

This conversation ended the same as it began: with the solution to the feed problem at Korosten'.

Lest an impression is created that the Korosten' inhabitants feed their calves only straw, though enriched with minerals and concentrated feeds; straw is the basic component of the ration in the original preparation. But in the final stage they give the animals silage, root crops, and other feeds. Now there is much more feed of all types prepared for the winter period than was planned. Still, the managers and economists have posed a goal for themselves that, at the cost of improved land fertilization, to harvest grass, corn for silage, and root crops in significantly larger quantities than at present. Moreover, much has been done and is being done to insure that all feeds go to farms only through feed shops and feed squares which are being built and improved intensively on each farm.

For the present winter stall maintenance period, the cattle growers of Korosten' have undertaken to sell to the state 292 tons of meat and 254 tons of milk more than they did last winter. As for the future--there will be new horizons.

12598
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LIVESTOCK

SHEEP RAISING PROMOTED IN ESTONIA

Tallinn SOVETSKAYA ESTONIYA in Russian 6 Apr 84 pp 2,3

/Article by V. Teytel'baum, candidate of economic sciences: "Sheep Raising Is Profitable For All"/

/Text/ Over a period of a number of years, SOVETSKAYA ESTONIYA has repeatedly directed attention to various aspects of the problem concerned with the development of sheep raising in our republic, mainly owing to the fact that no other branch of animal husbandry has aroused such controversies over the feasibility of its development and even over its right to exist. Nevertheless, it has endured all of the tests placed in its path and continues to exist today, although in terms of quantity and quality it is found lacking, especially in light of the tasks assigned by the party during this present stage in the development of our country's agriculture and the USSR Food Program. This is why the editorial board considers it advisable to return once again to this problem.

A Brief Excursion Into History

Following the restoration of Soviet rule, towards the end of 1940, there were 322,900 sheep in the Estonian SSR. In 1940, 847 tons of wool and 6,500 tons of mutton (nine percent of all meat output) were produced.

During the post-war years sheep raising in our republic developed parallel with other branches of animal husbandry, albeit at a somewhat slower tempo. Work was carried out in this branch by a considerable number of agricultural enterprises, all of which supplied wool in the form of state deliveries. By the end of 1959 there were 273,900 sheep (56 sheep per 100 head of cattle) at all categories of farms, including 66,500 head (24.3 percent of the overall number) in the public sector. Roughly 665 tons of wool were produced and 4,300 tons of mutton, or 4.8 percent of the gross meat output. The center of gravity for sheep raising shifted to the private sector, with the public sector still accounting for one fourth of the overall number of sheep and the gross yield of wool.

During subsequent years, under the pretext of orientation towards more intense specialization, our kolkhozes and sovkhozes commenced the rapid elimination of

the sheep farms. During the 1970's and 1980's, the number of sheep in the public sector ranged from 5,300 to 7,600 head. On 1 January 1983 there were 7,600 sheep in the public sector.

The number of sheep in the private sector showed a tendency first to decrease and then to increase. On 1 January 1983 the figure was 162,800 sheep (148 sheep for every 100 head of cattle). In 1982, 379 tons of wool and 2,800 tons of mutton (1.6 percent of the overall quantity of meat products) were produced.

Is Sheep Raising Profitable?

This question is a proper one in view of the trends in specialization and the degree of concentration and intensification in cattle husbandry and swine raising. The only answer is a simple one: within definite limits for the branch, sheep raising is profitable beyond any doubt!

Favorable economic prerequisites have been created for the maintenance of sheep at all categories of farms. Since January 1983 the state purchase prices for sheep (live weight) have been raised by 48 percent. By way of comparison, it bears mentioning that during the same time frame the purchase prices for 1st grade milk have increased by only 7.3 percent, for cattle of a high or average state of nourishment -- by 15, swine of the 1st or 2d categories -- by 8 and broilers -- by 7 percent.

The state pays the kolkhozes, state enterprises and private sheep raisers 264 rubles (earlier the figure was 179 rubles) per quintal of live weight of sheep in a high state of nourishment. A payment of 255 rubles per quintal (earlier the figure was 210 rubles) is made for sheep of the Romanov strain. Moreover, 25 percent of the purchase price is paid for Romanov sheep with a sheepskin, wool or semi-wool covering that conforms to the standard and has a live weight of not less than 16 kilograms. The modern purchase price for sheep of a high state of nutrition exceeds the purchase price for cattle in the same state of nutrition by 42 percent, swine -- by 14 and broilers -- by 26 percent. Today it is possible to earn 185 rubles from the sale to the state of a sheep in a high state of nourishment and with a live weight of 70 kilograms. This is more than adequate. In addition, the purchase prices for raw sheepskins have been raised twofold. In the case of wool, the population can sell surplus amounts of it at the prices prevailing on the kolkhoz market, that is, at rather high prices.

Taking into account the new purchases prices, the average profitability for sheep raising at agricultural enterprises throughout the republic in 1983 exceeded 30 percent (compared to 2 percent in 1982) and on farms having well organized sheep raising operations it reached 75 percent.

Thus sheep raising is profitable from the standpoint of income!

Let us continue our analysis. Compared to other agricultural animals, sheep are less demanding with regard to the feed structure. The feed base consists of local bulky, that is, coarse (hay, straw) and pasture feed. The proportion of purchased and concentrated feed in the annual ration for sheep is minimal. From early spring up until late autumn, they can graze successfully on any

natural feed lands -- along the edges of small meadow and pasture tracts, on grain crop stubble, on overgrown lands, on tracts from which row crops have been removed and on the aftergrowth of haying lands and clover (mainly intended for replowing). The sheep obtain comparatively large amounts of feed from these tracts, which generally are not utilized sufficiently by other types of livestock.

The fact that sheep are not very fastidious when it comes to feed is borne out by the fact that they consume more than 500 types of plants, while at the same time cattle consume only 60-70 types. Since sheep also consume weeds, they furnish assistance in any campaign directed against weeds. They also serve to control undergrowth. In view of the fact that cheap and quite often gratuitous feed predominates in the sheep ration, the production cost for their annual ration is less than that for the rations of other types of livestock and poultry. For example, in 1982 the average production cost at kolkhozes throughout the country for 1 feed unit of annual ration was as follows: dairy herd -- 11.90 kopecks, young cattle stock -- 13.68, swine -- 15.74, poultry -- 19.23 and sheep -- 10.41 kopecks. Emphasis should be placed on the fact that our republic has ample feed lands at its disposal for sheep.

The fact that sheep are much easier to maintain than other types of domestic animals also underscores the advantages to be gained from the development of sheep raising. Comparatively speaking, sheep are not very demanding when it comes to maintenance conditions. They do not require substantial or heated facilities, nor costly equipment. And the tending of sheep is comparatively simple and requires little effort. Practically speaking, sheep do not require any tending during the extremely long pasture period.

Sheep furnish valuable raw materials -- wool used both in industry and in the domestic economies of the rural and municipal populations. Sheepskins, for which there is a tremendous demand at the present time, are a valuable raw material for industry. This valuable raw material is used for the production of sheepskin coats for both men and women, winter hats, collars and box-calf for high quality leather and fancy goods products. Thus, sheep raising is profitable in all respects.

Glancing Into the Future

The tasks and trends for the further development of sheep raising in the Estonian SSR are formulated in the 10 August 1978 Decree of the Central Committee of the Communist Party of Estonia and the ESSR Council of Ministers entitled "Development of Sheep Raising in the Republic." The following task is raised in this document: to increase the number of sheep throughout the republic as a whole to 300,000 head by 1985. A number of organizational measures have been outlined for increasing the production of sheep raising products in both the public and private sectors. In particular, one base sheep farm (with roughly 500 sheep) at the very least will be created in each rayon, with responsibility for furnishing assistance to private farms in organizing breeding and other types of sheep raising work and selling pedigree material to them for the purpose of improving the productive qualities of the sheep being bred. Here the principal thrust is integration in the sphere of sheep raising between the public and private sectors.

The creation of such rayon base farms does not exclude however the feasibility of organizing commodity sheep farms at any other kolkhoz, sovkhoz or subsidiary farm of an industrial enterprise, desiring to make use of all of the intra-farm reserves available for increasing the production of animal husbandry products.

The above-mentioned decree called for the creation of a cost accounting sheep raising association with a leading enterprise -- the Puka Sovkhoz. Its task -- to improve the production organization and the processing of sheep raising products and also to furnish assistance to private farms engaged in sheep raising operations.

Recently the question has been raised regarding the creation in our republic of a society of sheep breeders. This is particularly apropos in view of the fact that there are 39,000 private farms engaging in sheep raising work at the present time and their number will continue to increase in all probability.

A question has also been raised concerning the feasibility of developing subsidiary enterprises for the processing of sheepskins on farms throughout the republic. Since the products obtained from sheepskins are in great demand, the processing of these skins would make sheep raising considerably more profitable and at the same time promote an increase in the production of mutton and wool. However, a solution for this problem is being held up by a shortage of equipment and by certain formalities of an organizational nature.

In all probability, the private sector will continue to occupy a leading place in sheep raising in the future. And this is considered to be both advisable and economically profitable. It would appear that the production level and the quality of the sheep raising products will depend to a great degree upon integration of the aspects between the public and private sectors. Considerable responsibility has been imposed upon the public sector for the efficient organization of this process on the whole.

At the present time, public sheep raising is concentrated mainly at pedigree sheep farms. In all, there are 17 such farms in the republic. During 1982, 1,755 pedigree sheep (including 1,195 rams and 560 ewes) were raised for sales purposes at the pedigree farms. However, of the number selected for sale, only 1,495 of the pedigree sheep were actually sold (including 775 to the population, 530 to other farms and enterprises throughout the republic and 190 sheep to points beyond the borders of our republic).

The network of pedigree sheep farms must be expanded and the number of sheep being raised at these facilities must be raised to 10 percent of the overall number of sheep at all categories of farms. This will make it possible to increase the sale of pedigree sotck to the population and to other farms, thus satisfying the increasing demand. This means that the number of sheep in the public sector (mainly at pedigree farms) must be increased compared to the situation in early 1983 by a factor of four. The implementation of this task will require intense organizational work by the rayon agroindustrial associations and also by the republic's sheep raising association.

The number of sheep in the private sector must be increased to roughly 270,000 head, that is, an increase of 107,000 head compared to the situation which existed in early 1983, or an increase of 66 percent. If the desire and organization are present, this task will be fulfilled with the passage of time.

According to data supplied by the ESSR Central Statistical Administration for 1 January 1983, of 116,800 farms of kolkhoz members and sovkhoz manual and office workers, sheep were being maintained on only 39,200 of them, or 33.6 percent of their overall number. On each farm engaged in sheep raising operations there was an average of 4.1 sheep. Within the republic there are household farms which are maintaining from 10 to 15 or more sheep. In accordance with the aims of the government, one household farm can have up to 20 sheep (or goats). And in the absence of cows the number of sheep may exceed the established norm.

Based upon the above it would appear that an increase can be achieved in the number of sheep in the private sector both by increasing their numbers on farms already engaging in sheep raising operations (at least by 1-2 head) and also through the acquisition and maintenance of sheep on farms which previously did not raise sheep.

Recently, so-called family livestock farms have been organized on many farms throughout the country and in our republic. Here the families are provided with definite groups of livestock or poultry for raising. In conformity with an agreement concluded between the farm and the appropriate families, the work of the latter is paid for on a general basis, that is, similar to the manner in which other livestock breeders are paid. In the process, the products obtained over and above the volume called for in the agreement are paid for on another basis. This portion of the output is purchased by a sovkhoz from these families in accordance with the procurement prices established for the private sector. Such family farms should be established for sheep farming. They can be created on the peripheries of farms, in areas where there are suitable feed lands for sheep raising.

Our sheep raising operations can become especially profitable when, by means of proper breeding work, success is achieved in increasing the fruitfulness of the ewes, early maturity in our sheep and their meat qualities. It is towards this end that improvements should be carried out in the Estonian dark-headed sheep through use of rams of the German black-headed sheep (imported in 1982 from the GDR) and the Estonian white-headed sheep -- improved through use of rams of the Ile De France strain of French origin (imported in 1981), the offspring of which grow rapidly and produce better quality wool. The imported breeding stock is assigned to the republic's best pedigree farms. The offspring are sold to other farms, including private sheep raisers.

Work concerned with improving the pedigree qualities of sheep is of special importance to farms operated by the population, since it is here that the principal bulk of the sheep is concentrated. Thus here, as a result of inbreeding (blood relationships), the sheep are less productive and display less growth than sheep in the public sector.

> Such are the prospects for the future. And then there is the real situation. Last year a reduction was once again observed in the number of sheep at agricultural enterprises throughout the republic, especially in Yygevaskiy, Tartuskiy, Kharyuskiy and some other rayons. This phenomenon is causing considerable concern, particularly in view of the fact that it is adversely

affecting the development of sheep raising operations on the private farms. Thus the ESSR Agroprom and the rayon agroindustrial associations should undertake more decisive measures aimed at ensuring fulfillment of the tasks assigned by the directive organs in connection with the further development of sheep raising operations in our republic.

7026
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ACADEMICIAN REVIEWS PROSPECTS OF BAM ZONE AGRICULTURE

Moscow SEL'SKAYA ZHIZN' in Russian 6 Apr 84 p 1

[Article by Yu. Novoselov: "Fields and Farms of the BAM"]

[Text] Construction of the Baikal-Amur main railway line is nearing completion. Through traffic will be opened this year along the whole length of the line. Next will come the economic opening of the BAM zone. It is necessary, first of all, to organize a steady supply of various fully nutritional food products for the population.

A good deal has already been done to resolve this task. Measures have been taken to strengthen the material and technical basis of the sovkhozes located in the BAM zone. During the period from 1975 to 1983, basic production funds and energy capacities for operations in the zone have doubled. New sovkhozes were established and hunting-industry kolkhozes were strengthened in the direction of dairy, vegetable and potato production.

It must be noted, however, that agriculture in the BAM zone is developing unevenly: it is proceeding successfully in those oblasts, krays and ASSRs where questions of agrarian development are completely resolved. For example, in the Buryat ASSR, were organized new sovkhozes "Severnyi" and "Angarskii" and also new agricultural enterprises in the Kicher settlement, in the Tyya river valley. The construction of production facilities here is being carried on simultaneously with the erection of housing and social, cultural, and service projects, as well as the building of highways. The chief builders of the Buryat portion of the BAM line are taking an active part in the construction of the most important projects in the rural areas, in putting new lands into operation and in carrying out agricultural work. Unquestionable merit in these activities is credited to the workers of the Northern Baikal raykom of the CPSU, the managers of the BAM construction organizations and the managing organs of the Buryat ASSR.

Unfortunately, matters are by no means proceeding in this way everywhere. Some executives of ministries, departments and local organizations hope that all necessary provisions will be brought to the BAM zone and, for that reason, there is no need to worry about local production. Doubts are also being expressed about the possibilities of producing food stuffs in the conditions of this zone.

But in the meantime, it has been demonstrated by scientists with many years of experience and by the foremost enterprises that it is possible to obtain a fairly good harvest of forage crops, potatoes and vegetables. Thus, many experimental divisions of the VASKHNIL, [Siberian branch of the All-Union Lenin Academy of Agricultural Sciences] harvested, in 1983, per hectare, from 173 quintals of potatoes in the Ust'-Kutsk Rayon of the Irkutsk Oblast to 360 quintals in the Komosomol Rayon of the Khabarov Kray. At the Kazachinsk-Lensk base (Irkutsk Oblast), there was a harvest per hectare of 400-500 quintals of cabbages, 100-150 quintals of cucumbers and 200-250 quintals of tomatoes. In the Barguzinsk basin of the Buryat ASSR, the harvest of cabbages reached 630 quintals per hectare. In the Tyndinsk Rayon, more than 50 quintals of hay per hectare was harvested with improved hay-mowing machines. Even southern Yakutia, the experimental divisions harvested 140-150 quintals of green forage crops per hectare.

There are many possibilities for the development of sovkhozes. But, unfortunately, the employees of some ministries and departments are not hurrying to establish an agrarian base on the main railway line. Despite the decrees by the managing organs, for the second five-year plan now the Ministry of Coal Production is dragging out the beginning of construction of an agricultural complex in the city of Neryungri, where there are so far only about 400 cows to supply a population of 100 thousand. The Ministry of Communications is not rushing to build subsidiary farms near the Chegdomyn station in the Khabarovsk kray. The USSR Ministry of Energy is dragging out construction of two greenhouses near the Neryungri state regional electric power station and the Zeis hydro-electric power station. The USSR Ministry of Water Resources and the RSFSR Ministry of Water Resources, the RSFSR Ministry of Fruit and Vegetable Agriculture and the USSR Ministry of Nonferrous Metals all owe a large debt to the population of the zone.

The responsible officials of the Ministries of Transport Construction and Communications occupy a strange position. When it is necessary to begin building dairy farms, greenhouses and poultry factories, the Ministry of Transport Construction advances the following arguments: our organizations will build the main railway line and then leave; we do not need subsidiary farms. The officials of the Ministry of Communications state: we have not yet come to the rayons of the BAM zone; we do not yet need subsidiary farms. When construction is completed on certain portions of the line and they are put into operation by organizations of the Ministry of Communications, then the argument changes: the Ministry of Communications is prepared to set up subsidiary farms, but there is no one to build them for because the Glavbamstroi subdivision has already been re-stationed in other rayons. The constroversies have been going on in this way for two five-year plans now. As a result, neither ministry has real subsidiary farms in the BAM zone.

What, then, can and should be undertaken immediately and in the long term for the rapid development of agriculture in the BAM zone and in the interior bases?

In the first place, the maximum possible material and technical assistance should be rendered to existing sovkhozes, kolkhozes and subsidiary farms in

the BAM zone. It is more advantageous to deliver a wagonload of mineral fertilizer here than to cart tens of wagonloads of potatoes to the other end of the world. All the operations of the zone should be provided with full-value mixed fodders. The plowed fields should be used for the production of moist and coarse fodders, potatoes and vegetables. It is necessary to organize supplies to local operations of seeds only for varieties applicable to the rayons. This problem is now being resolved in an uncontrolled manner and for the reason it is possible to find a kind of fodder cabbage brought to northern Buryatia from the Baltic countries, instead of varieties for human consumption, etc. A highly productive replacement stock on newly constructed farms must be forthcoming strictly according to plan. To complete all the farms, first-rate heifers are needed with a productivity potential of 3.5-4 thousand kilos of milk. This is more advantageous than building cowsheds twice the size and filling them with low-productivity cows.

There are also several long-term problems which will need to be resolved in more than one five-year plan. In the first place, this involves opening up of new lands for production. The potential land resources suitable for production exceed the modest proposals of scientists many times over. But even these modest outlines are not really accepted by the land-reclamation organizations.

Work in the Tyndin Rayon has not begun. There is practically no introduction of new lands in southern Yakutia. There is a catastrophic lag in surveying project work and the quality of many projects is extremely low. Even with the weak development of land-reclamation work on the BAM, there are not a few sections which, as a result of unskilled operations, are hopelessly ruined. Thus, in the "Pobeda" kolkhoz, in trying to make a long-term cultivated pasture, the whole fertile stratum was practically destroyed.

There is not a great amount of land suitable for opening up for production in the BAM zone. This is all the more reason to treat it carefully, in order not to lose, on account of erosion and unskilled treatment, the weak soil stratum created by nature over tens of centuries. A rule should be established to the effect that land may begin to be placed into production only within the framework of a project and each project must pass scientific expertise, including that of soil experts and agricultural scientists.

12249
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APPLICATION OF ACCOUNTING PRICES IN INTERFARM ENTERPRISES

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 2, Feb 84 pp 78-82

[Article by V. Bobkin, deputy chairman of the Ust'-Ordynskiy Okrug Ispolkom: "From Experience with the Development of Economic Relations in Interfarm Enterprises"]

[Text] The principle of mutual material interest in the final results of production of high-quality output with minimum expenditures per unit and mandatory observance of cost accounting profitability is the most important principle of interfarm cooperation in joint production of output, including beef, by kolkhozes and sovkhozes. This is expressed in economic relations among participants in cooperative work, relations that are regulated by the General Statute on the Interfarm Enterprise (Organization) in Agriculture, ratified by decree of the USSR Council of Ministers in 1977.

Analysis of the economic relations that have become established in interfarm formations indicates the need for further refinement of them.

Let us consider this using the example of mutual relations between the Lyurskiy Livestock Feeding Sovkhoz in Ust'-Ordynskiy Buryatskiy Autonomous Okrug of Irkutsk Oblast, which performs the functions of an interfarm enterprise, and the other farms that participate in interfarm cooperation.

Economic relations between the head sovkhoz and the participating farms manifest themselves mainly in two aspects: distribution of growth in live weight of livestock and profit received from joint activity.

The following points are the basis for mutual economic accounts in the interfarm formation.

The technological cycle of meat production at interfarm formations is broken into several stages (reproduction of young animals, raising young animals, and feeding out livestock). This objectively requires the establishment of technological and economic links among all partners in cooperation on a new basis. The movement of newly created use value through all elements of the technological cycle from the replacement farms to the head Lyurskiy Sovkhoz promotes greater incentive and mutual advantage for the partners in cooperation when there is interfarm division of labor. The final results convince participants that cooperation is better than operating the farms on a multi-

sectorial basis. The replacement farms, which specialize in reproducing young animals, turn calves over to the head enterprise, completing the first stage of production. Upon completion of supplementary and final feeding of the animals at the head farm the cost of the final product, the meat, includes labor expenditures of both supplier farms and of the interfarm enterprise.

Cooperative production can be efficient only if there are common interests that make it possible to direct the efforts of all participating farms to achievement of the final goal: receiving more output with lower expenditures for its production.

Mutual accounts which are correctly applied by the farms should insure reimbursement of the expenditures of all participating farms and stimulate production development. An even level of profit per ruble of expenditures should be observed here for average conditions of production in all its stages. We know that the production of milk and beef is interlinked, so specialization of these two areas demands solving the problem of mutual relations between farms that receive milk and those that receive beef. Current large dairy farms have an interest in selling calves immediately after weaning or at an age of not more than 20-30 days to other farms that specialize in raising young animals for meat, while the latter profit from raising calves from the youngest possible age. Therefore, in chosing the age of calves being bought and sold the interests of these farms coincide. But questions arise here which demand coordinated planning of state purchases of animal husbandry output.

Only output produced with means of production belonging to the sovkhozes and kolkhozes can be included in the accounting of fulfillment of their plan assignments. Therefore, the growth in live weight of livestock obtained at the head enterprise should belong to it, but after sale to meat industry enterprises it is counted for fulfillment of the plans for delivery of meat to the state. The interfarm formation has established a procedure under which the head enterprise receives only a meat production plan, without a plan for sale of meat. The delivery weight of the animals and the weight gain produced with additional feeding and finishing of the livestock after they are turned over to the state is counted in fulfillment of procurement plans for the farms. The weight gain obtained is distributed among the participating farms by number of animals delivered for additional feeding and finishing and by the number of feeding days they are kept at the head enterprise. In this situation correct planning of sale of meat to the state and distribution of it as jointly produced commodity output among the cooperating farms is a key factor in regulating mutually advantageous relations between the head enterprise and the participating farms.

At first glance, when the plan for state purchases of meat is delivered to the participating farms and the head enterprise is not given a plan, there may be a danger that the head enterprise's accountability for fulfillment of the plan for production and sale of output and for preservation of the herd will diminish. But the head enterprise has an interest in efficient meat production technology and reducing production expenditures, because this will enable it to renew its fixed production capital more rapidly: when producing more meat, and of better quality, an enterprise tries to sell it as quickly as possible to increase receipts into its economic incentive funds. When a contract is

being made special attention is devoted to planned weight gain of the livestock, the number to be delivered by months, how many animals will be taken out of finishing and with what weight, and what kind of plan there is for sale of meat to the state by participating farms.

These indicators are reflected in production-financial plans coordinated among the participating farms and the head enterprise; they jointly monitor the activity of the interfarm cooperative.

The animals turned over by the participating farms to the head enterprise for additional feeding and finishing are no longer the property of the replacement farms and are written off their balances, because these animals are put on the balance of the interfarm enterprise. The enterprise issues an economic document for the livestock purchase and monetary accounts are handled through it (before the introduction of calculated prices a receipt was written to the supplier enterprises).

As already noted, the beef production process under conditions of interfarm cooperation is broken down into two independent stages: reproduction at some farms, and feeding the animals at another, the head enterprise. These stages differ sharply in technology, and therefore also in production costs (which are the objective basis for establishing calculated prices). In beef production it is extremely important to use economically substantiated methods of calculating labor expenditures correctly and to improve mutual relations among reproduction farms. For example, special farms which purchase livestock enjoy privileged higher prices for young animals with live weights of more than 350 kilograms, while suppliers who sell them do not enjoy these privileges. Therefore, in addition to establishing economically substantiated calculated prices for livestock it becomes necessary to interest the reproduction farms in the final results of the work of the special farms.

Bolstering the economic stimulation of partners in cooperation to achieve the best final results of production depends significantly on how the distribution of profit received as a result of joint production activity is carried out. There is no strict regulation on this account by directive bodies; a meeting of authorized representatives of the participating farms decides the question based on local conditions with due regard for the amount of profit received and the state of the material-technical base of the farms.

Mutual economic relations should be based on a close interrelationship between the labor contribution of the reproduction farms and the head enterprise, which insure production of a certain product (in this case meat) on a cooperative basis, and the amount of profit. This gives the participating farms equal opportunities for reproduction, savings, and consumption.

The problem is to determine the contribution of each of the cooperating farms in the process of joint production. In practice various methods are used to determine the share of participation of each farm included in the cooperative beef production organization in the total amount of profit. In some cases livestock are evaluated at state purchase prices when delivered to the head finishing enterprise and profit is then distributed by results of the economic

year; in other cases they use so-called calculated prices. However, when young animals are sold to the head enterprise part of the surplus product created by the labor of the farms participating in the cooperative is always transferred to the head enterprise. For example, in the first year of operation state purchase prices were used for interfarm accounts between the Lyurskiy head finishing enterprise and the participating farms. But these prices were not suitable for such accountsbecause they did not make it possible to give the partners equal conditions for receipt of income from the joint production (state purchase prices do not compensate for expenditures per unit of output by particular stages of the single technological cycle of production). It was necessary to modify mutual relations. In practice cost accounting relations between interfarm enterprises and participating farms in recent years have primarily been carried on through calculated prices for output, and also by distribution of the profit received by the interfarm enterprises.

The head enterprise settles accounts with participating farms for the delivery weight of animals by a system of calculated prices immediately after the livestock are taken onto its balance.

The new, economically substantiated calculated prices create a good material interest for participants in a cooperative. Not only do they fully compensate for production costs, but they also give adequate profit for annual advance payments. This creates conditions for equivalent exchange of the results of production activity within an interfarm formation.

Under existing calculated prices the profit received from final finishing of livestock on an industrial basis compensated for expenditures to raise calves at reproduction farms only in the first years of the interfarm cooperative. Thus, in 1978 the reproduction sovkhozes delivered 2,575 steers with an average weight of 135 kilograms to the head enterprise. Expenditures to raise each calf at the reproduction sovkhozes were 348 rubles. The head enterprise accepted the steers at an average advance calculated prices of 243 rubles. In addition, based on the results of work for the year it transferred profit equal to 116 rubles per animal to the reproduction farms. Thus, the head enterprise paid 359 rubles (243 + 116) for each animal fed to 413 kilograms; in other words the reproduction farms received 11 rubles of profit a head.

Mutual economic relations among cooperating farms need further refinement. At the present time they take various forms and are not always mutually advantageous. The evaluation indicators used so far for young animals delivered to the head enterprise do not always insure reimbursement of all expenditures to participating farms. This has happened both for objective reasons that do not depend on the farms (increase in agricultural costs for receiving and selling output as the result of the rising cost of material-technical means, construction materials, and fuel and lubricants, and the tariffs and services of Sel'khoztekhnika, Sel'energo, and other organizations) and for subjective reasons (material, labor, and financial resources are not always used efficiently, as a result of which the production-financial activity of kolkhozes and sovkhozes suffers).

However, even though objective conditions changed no adjustments were made in calculated prices for young cattle delivered to the head enterprise from the replacement farms, so the calculated prices being used do not fully insure the needed amount of profit (only part of the expenditures to obtain beef refer to the Lyurskiy enterprise, and the rest relate to the participating enterprises).

A correct calculation of the total costs of all cooperating farms and the sum of profit from sale of the final product, in this case meat, is becoming very important. The internal calculated prices now in use are not sufficiently substantiated in economic terms. Thus, a head farm which specializes in raising and finishing cattle does not have an interest in buying steers with live weights of less than 50 kilograms. It is more profitable for them if the livestock weigh between 50 and 100 kilograms, because the prices of a weight gain of 50 kilograms in this period is generally much less than its actual prime cost. But the reproduction farms, which ship out the steers when they reach 40-45 kilograms, experience considerable difficulties with housing calves. Therefore, the question arose in the interfarm enterprise of revising the calculated prices and introducing new prices for steers of a younger age in order to stimulate the special farms that buy and raise calves from this period.

The scientific literature offers the most diverse recommendations on determining the amount of calculated prices. The diversity on this issue is reflected in the use of such prices and practice. For example, by 1980 the average delivery weight of young cattle bought by the Lyurskiy interfarm enterprise was 120 kilograms and the average prime cost of one quintal of weight gain of live weight for the farms participating in the cooperative was 227.8 rubles. The enterprise raised the turnover weight per head to 400 kilograms with a prime cost of 149.5 rubles per quintal of weight gain and an average sale price of 202.4 rubles per quintal of live weight. It paid the reproduction farms 228 rubles for one quintal of live weight of animals. As a result, the enterprise received 52.9 rubles of profit per quintal of live weight and the reproduction farms received 0.2 rubles.

Therefore, the head enterprise, which does not engage in reproduction of calves, is in more favorable conditions than the participating farms, which get the most labor-intensive process in beef production, that is, obtaining calves and raising them in the first period of their lives. When establishing internal calculated prices for young livestock delivered from replacement farms to the head finishing enterprise, an objective evaluation of the cost of the breeding stock obtained at the dairy farm is important. According to the currently effective instructions for writing annual reports, the cost of a calf at birth is equal to 150 kilograms of milk. At farms which do not have separate cost accounting subdivisions (departments, brigades, and livestock units) engaged in raising and finishing livestock, all expenditures are applied to the finished output at the same kolkhoz or sovkhoz. When animals are transferred to another farm (when dairy production is separated from meat production) the actual cost of a calf at birth begins to interest all participants in integrated production. For example, reproduction farms have an interest not only in compensation for the cost of breeding stock

when calves are sold to a special farm, but also in receiving the profit necessary for expanded reproduction. However, making one head of breeding stock equivalent to 150 kilograms of milk leads to reducing the prime cost of a calf, which is the basis of the calculated price. In the example cited, with the calculated prices existing in 1978 the profit received from final finishing of livestock compensated for the costs of raising calves at dairy farms. But this occurred when the prime cost of breeding stock was calculated in advance and costs equal to the costs of receiving 150 kilograms of milk were assigned to a calf at birth. However, this reflects only half of the real level of costs. It is advisable to determine the cost of a head of breeding stock on a conditional basis; by expenditure of feed to maintain a pregnant cow during the interlactation time, because most of the feed in her organism goes for development of the calf. According to our calculations, the cost of a calf at birth should be made equivalent to 350 kilograms of milk because the productive feed used to get breeding stock weighing up to 30 kilograms could produce 350 kilograms of milk yield given the present level of cow productivity in the okrug. In this case the prime cost of a calf at birth would rise from 40 to 93 rubles.

Thus, to make the mutual economic relations equivalent beginning from expenditures for reproduction of calves at farms participating in the cooperative and on the prime cost of gain in the live weight of animals at the head enterprise it is essential to distribute profit proportional to actual expenditures of all participants in the interfarm formation in comformity with their share participation.

Internal calculated prices for participants in a cooperative are determined by specific periods. In 1980 the earnings per animal there were 809.6 rubles (202.4 rubles x 4 quintals) while one-time expenditures at the head enterprise were 418.6 rubles (149.5 rubles x 2.8 quintals) and at the supplier farms they were 273.3 rubles (227.8 rubles x 1.2 quintals). Earnings from sale of each animal were 117.7 rubles (809.6 rubles - (418.6 + 273.3 rubles)) or 17 kopecks per ruble of expenditures. In other words, the level of profitability of meat production was 17 percent. Therefore, 46.4 rubles (17 percent of 273.3 rubles) from the sum of profit from sale of animals belongs to the supplier farm, while 71.7 rubles (17 percent of 418.6 rubles) belongs to the head finishing enterprise.

Thus, the interfarm calculated price for young cattle at replacement farms comprises the sum of production costs to raise one head of cattle and the sum of profit for these expenditures. The price is 319.7 rubles (273.3 rubles + 46.4 rubles).

The calculated price of one quintal of live weight for sale to the Lyurskiy interfarm enterprise is 266 rubles, which will insure the same profitability for meat production (17 percent) at the replacement farms and at the special farm. These calculations illustrate the need for thorough economic substantiation of the level of calculated prices by weight groups of young cattle so that changes in the quantities of initial figures are taken into account at the right time, in particular the amount of expenditures for output in cost terms (prime cost) and sale prices for beef.

The use of calculated prices presupposes that earnings from sale of the final product, head of livestock, not only compensates fully for the production costs of the interfarm formation, but also insures that they receive adequate profit for advance payments throughout the year, for settlement of accounts with the budget and with the State Bank for loans, and for formation of economic stimulation funds in the necessary amounts.

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MOLDAVIAN BUDGET ALLOCATIONS FOR APK DEVELOPMENT DISCUSSED

Kishinev KOMMUNIST MOLDAVII in Russian No 2, Feb 84 pp 68-72

[Article by V. Danilin, deputy head of the budget administration of the MSSR Ministry of Finance, and R. Meshalkina, chief expert of the budget administration of the MSSR Ministry of Finance: "The Role of the State Budget in Financial Support of the Food Program"]

[Text] When it advances new strategic objectives in the economic sphere, the Communist Party is always guided by the teachings of V. I. Lenin, who noted that the art of party control and policy in the national economic field "consists in timely consideration and knowledge of where to concentrate one's main efforts and attention" ("Poln. sobr. soch." [Complete Works], Vol 40, pp 85). It was precisely this Leninist approach that was used in working out the USSR Food Program for the period until 1990, which was adopted by the May 1982 Plenum of the CPSU Central Committee. This is an outstanding document of great economic and sociopolitical importance and serves the fundamental interests of the people. A distinctive feature of the program is its comprehensive approach, envisioning unification of the efforts of the working people of agriculture, the industrial sectors related to agriculture, as well as transportation, procurement , and trade in order to achieve a common final goal: insuring that the population is supplied with all types of foodstuffs and substantially improving the structure of the public diet.

The Food Program stands on a solid foundation. Suffice it to note that the total sum of state expenditures appropriated for development of sectors of the agroindustrial complex in the 11th Five-Year Plan will reach 720 billion rubles. In the 12th Five-Year Plan it is expected that 33-35 percent of the total volume of capital investment in the national economy will be appropriated for these purposes. This money is being directed to accelerating scientific-technical progress, strengthening the material-technical base of all sectors of the agroindustrial complex, and further development of production mechanization, chemicalization, and land improvement.

In the current Five-Year Plan 4.4 billion rubles of capital investment is being appropriated for development of the agroindustrial complex of the Moldavian SSR, including 3.8 billion for agriculture. The republic will receive a large number of tractors, grain-harvesting combines, motor vehicles, other equipment, and mineral fertilizer. The area of irrigated land will also increase significantly. Essentially, radical measures are being taken to re-equip agriculture, industrialize its sectors, and mechanize labor-intensive

processes. As a result, labor productivity at the kolkhozes and sovkhozes will rise about 1.7 times in the five years, while the production of agricultural output per unit of area will increase at least one-third.

The large-scale measures needed for successful fulfillment of the Food Program steady refinement of the mechanism of economic activity and conduct of a purposeful financial policy.

The State Budget, as the main financial plan of each republic and of the country as a whole, serves as the main source for financing measures for further development of the agroindustrial complex. In 1983 alone more than 737 million rubles was appropriated from the state budget for material-technical equipment, land improvement, increasing the production and procurement of agricultural output, and processing it. This is about 71 percent of all expenditures from the republic budget for financing the national economy. Incorporating the capital appropriated enables sovkhozes, sovkhoz-plants, and other state industrial and agricultural enterprises and organizations to carry out measures to build up and renew fixed capital, modernize production, increase the area of perennial planting, and equip farms with modern, highly productive machinery.

A broad and all-encompassing program of economic stimulation of agriculture will be consistently implemented in conformity with the decisions of the May 1982 Plenum of the CPSU Central Committee. From now on the profit of sovkhozes, sovkhoz-plants, and other state agricultural enterprises remains almost entirely at their disposal, so they can use it to expand production and form economic incentive funds. Each year major appropriations are allocated from the USSR State Budget to make up the difference in prices for state purchases of milk, meat, potatoes, vegetables, and certain other products. This money is transferred to the budgets of the Union republics each year. The total in the Moldavian SSR last year was more than 481 million rubles.

To strengthen cost accounting, insure a high rate of expanded reproduction at kolkhozes, sovkhozes and other agricultural enterprises, and intensify their material interest in increasing production and improving the quality of agricultural output, as of 1 January 1983 state purchase prices for cattle, hogs, milk, grain, sugar beets, potatoes, vegetables, and other products were raised. For the country as a whole the amount will be 16 billion rubles per year. Part of the money appropriated for these purposes is used by special designation as supplements to state purchase prices for output sold to the state by economically weak farms in order to strenghthen their economy. The introduction of new prices and supplements will make it possible to substantially raise the profitability of kolkhoz-sovkhoz production, but it will not be reflected in any way in retail prices because the state is making up the difference between retail and state purchase prices.

The corresponding decision on writing off and postponing indebtedness on unsecured bank loans is also very important for strengthening the economy of the kolkhozes and sovkhozes. Indebtedness on USSR State Bank loans postponed earlier and subject to repayment by low-profit and money-losing kolkhozes and

sovkhozes is being written off at the expense of the USSR Budget in an amount of 9.7 billion rubles, which includes 27 million rubles for farms in Moldavia. In addition, 11.1 billion rubles of unsecured indebtedness owed by these farms has been postponed for 10 years with repayment beginning in 1991; this includes 35 million rubles for the Moldavian SSR. Low-profit and money-losing kolkhozes and sovkhozes have been freed from payment of interest to the USSR State Bank for overdue indebtedness. The money released as a result of these measures is also being used to expand production and improve the finances of the kolkhozes and sovkhozes.

Major steps are also being taken to solve social problems in the countryside and reorganize rural populated points. However, the scale of this work is still inadequate. Thus, in many cases assignments for putting residential housing and municipal and cultural-domestic facilities into use and for fixing up populated points are not completely fulfilled. The lag in cultural domestic, medical, and trade service to the agricultural population has not been overcome. The economically weak kolkhozes and sovkhozes generally do not have enough housing for machine operators or adeqate schools, medical and children's institutions, clubs, bathhouses, and other cultural-domestic and municipal facilities, and lack paved roads, which slows down the development of production. All these things taken together make it difficult to keep personnel at these farms and cause their mobility and frequent replacement. The government is taking effective measures to eliminate these problem areas. According to a decision of the May Plenum of the CPSU Central Committee construction of residential buildings, clubs, bathhouses, and other social-domestic facilities at these farms will be financed from the state budget from now on. Appropriations are also being made for laying internal roads and for maintenance of pre-school and other cultural-domestic establishments and organizations. These expenditure sub-headings will now be envisioned each year in the budgets of the Union republics, and we should note that unused amounts at the end of the year are not closed out. Instead they are kept for the next year to finance similar measures. This is a great help. Suffice it to say that appropriations to kolkhozes for construction of internal roads, construction and maintenance of cultural-domestic facilities, and payment of insurance payments in the State Budget of the Moldavian SSR for 1983 were 39 million rubles.

In the rayons this money is distributed by Councils on Issues of the Agro-industrial Complex and the agricultural administrations of rayon executive committees, who are also supposed to watch to see that underdeveloped kolkhozes use these material and financial resources according to their designation. Unfortunately, this matter is still not receiving the proper attention everywhere.

The resolutions of the May Plenum of the CPSU Central Committee attach enormous importance to keeping personnel and intensifying their role in fulfillment of the Food Program, improving the style and methods of economic activity, and increasing personal accountability for observance of plan, financial, and technological discipline. The initiative of specialists who express a desire to move from administrative bodies and the service sphere to work directly at the kolkhozes and sovkhozes is being encouraged by every means. To keep

working people in the countryside and to increase their material interest, the salaries of managers, specialists, and office workers of sovkhozes are rising by an average of 30 percent. This measure is being carried out in stages, and will be done in Moldavia beginning in 1985. It is also recommended that this system of labor payment to working people should be used at the kolkhozes. As of 1 January 1983 the system and conditions for payment of wage supplements for continuous time of service that a particular farm has established for tractor-machine operators (that is 25 percent of earnings) applied to workers engaged in animal husbandry at sovkhozes and other agricultural enterprises. These workers are given additional vacation in the same amount as tractor-machine operators.

As we see, the Soviet State is undertaking large financial and material expenditures toward successful realization of the Food Program. Needless to say, this aid to agricultural organizations and enterprises absolutely must be supplemented and backed up by everyday organizational work in the local areas and maximum use of internal reserves, each of which will help raise production efficiency. We know that very significant shortcomings in the activity of agricultural enterprises and organizations of the republic have not been fully eliminated. For example, the quality of output does not always meet the higher demands today. Sharp deviations are observed in the level of prime cost of output. The share of output sold at a loss to the farms has not declined, but rather has risen in recent years. For these reasons, and also as a result of the fact that there has been no proper struggle against losses and large unproductive expenditures in all stages of economic activity, a number of sovkhozes and sovkhoz-plants come to the end of the year with unsatisfactory results of financial activity. As already stated, unproductive expenditures and losses, which occur on a significant scale, exert a substantial influence on decline in the profit received. We refer here to losses from death of livestock, operations with containers, penalties paid for failure to deliver all goods and for violation of shipping conditions, loss from defective articles, and much more. For republic sovkhozes and sovkhoz-plants as a whole, unproductive expenditures and losses grew 39.9 percent a year while actual profit received increased 4.5 percent.

There are still many cases where money appropriated for the development of agriculture is diverted and used irrationally. Selective checks in 1982 found 24 cases where kolkhozes and sovkhozes built nonagricultural facilities. As stated in the CPSU Central Committee decree on the work of the Central Committee of the Moldavian Communist Party, many farms are not using fixed productive capital well, and the return on capital investment is declining. The capacities of the animal husbandry complexes, for example, are only 60-70 percent used. We also know that each year thousands and thousands of various types of machines and aggregates in agriculture are not used at all or operate with incomplete loading. Equipment is especially poorly used, and therefore the return on capital is low at farms in Strashenskiy, Kalarashskiy, Kotovskiy, and Rezinskiy rayons. There are frequent cases of machinery and equipment being written off ahead of schedule.

The facts presented here illustrate that the farms still have large reserves for a further increase in the efficiency of production by conserving material

expenditures, better use of productive capital, and strengthening financial discipline. The large material and financial resources being directed to the agroindustrial complex should insure a return as quickly as possibly, above all in the form of a weighty increase in high-quality food products on a broad scale and in a varied assortment.

It is especially important today, when the state is undertaking a further increase in investment in agriculture and its intensification, to focus attention on rational use of the financial resources appropriated and on insuring strict control over expenditure of state capital. It is important that agencies of the finance-credit system analyze the financial and economic activity of enterprises and organizations more carefully and help them identify existing reserves and improve the mutual relations of kolkhozes and sovkhozes with the budget and with service organizations. Their direct obligation is to make regular checks in the local areas to see that there are plans of organizational-technical measures that envision lowering the prime cost of output and raising production efficiency and to carefully analyze their fulfillment by literally every point. Special attention should be given to whether state purchase prices for agricultural output and supplements to them are used correctly and to the causes of unproductive expenditures that lower the economic efficiency of kolkhoz and sovkhoz production. We must bolster control over the formation and use of economic stimulation funds, bonus practices at sovkhozes and sovkhoz-plants, and the correctness of the accounts of organizations of the Moldavian Gomkomsel'khoztekhnika and Sel'khozkhimiya for machinery and mineral fertilizer delivered, because many conflict situations arise in precisely these areas.

We should also mention that at the present time many enterprises and organizations of the agroindustrial complex are not using material incentive funds correctly. Specifically, little capital is allocated from these funds for bonus payments to workers who achieve high indicators in labor, while at the same time an unjustifiably large amount is spent to give one-time incentive and material assistance, which contradicts the objectives of directive organs that bonuses should be closely coordinated with the final results of the labor of each collective and individual working person.

The purposeful policy being followed by the party and government of efficient management of public production and the enormous amount of capital being directed to the development of agricultural and its related sectors create the necessary conditions for profitable work by all sectors of crop farming and animal husbandry. Full use of these conditions demands that personnel show competence and an ability to apply economic methods of management in practice and put all existing labor, material, and financial resources in action. Highly rigorous observation of financial discipline at all enterprises of the agroindustrial complex and insuring a high return on every ruble spent are essential conditions for successful fulfillment of the Food Program.

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TILLING AND CROPPING TECHNOLOGY

WAYS OF INCREASING GRAIN QUALITY DISCUSSED

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[Article by Professor A. I. Stepanov, Academy of Social Sciences attached to the CPSU Central Committee: "Ways of Improving the Quality of Grain"]

[Text] Strong and hard varieties of spring wheat are the main cash crop of the farms in North Kazakhstan. The biological merits and certain technological properties of such wheats fetch a higher procurement price, differentiated according to gluten content and quality. Production of such wheats is increasing with each year: the area sown to them is expanding, their average yields are rising and, consequently, so are their gross harvest and procurement.

North Kazakhstan's share of the total procurement of strong wheat in the USSR has been 75 percent in recent years (while here such wheat accounts for about a fourth of its total acreage, and for 17 percent of its total gross harvest). Therefore the expansion of the production of high-quality grain in the six virgin-land oblasts of North Kazakhstan is of exceptional national economic importance.

On average for the 10th Five-Year Plan, the share of strong varieties in wheat procurement was 40.5 percent, as compared with 29.1 percent under the 8th Five-Year Plan and 28.7 percent under the 9th Five-Year Plan. At the same time, the growth rate of the procurement of such wheat was significantly higher than the growth rate of grain procurement in general. If under the 10th Five-Year Plan grain procurement in general increased by 33.4 percent in comparison with the 8th and 9th Five-Year Plans, including 19.9- and 24.6-percent increases for wheat, then the procurement of strong wheat increased respectively by 66.7 and 75.9 percent.

Of all the virgin-land oblasts of Kazakhstan, the most strong and hard wheat per unit of area is procured from the farms in Turgay Oblast. During recurring droughts in the 9th and also the 10th Five-Year Plans, the volume was between 800,000 and 900,000 tons, nearly twice as much as from the farms in the RSFSR. For selling grain of high quality, the sovkhozes and kolkhozes in Turgay Oblast received additional payments totaling about 100 million rubles. In 1981-1982, the share of strong and hard wheats within total wheat procurement in the oblast was 82.4 percent.

It should be noted, however, that the growth rate of the procurement of strong wheat under the 10th Five-Year Plan was slower than under the 8th Five-Year Plan, and the procurement of hard wheat even declined. Which indicates that a large quantity of the commodity grain sold by the farms in the virgin-land oblasts of Kazakhstan fails to meet the specifications for strong and hard grains, and is therefore purchased as ordinary grain.

Cropping methods suitable for the grown varieties are the secret to growing grain of high quality. Under the conditions of North Kazakhstan, it is best to plant strong wheat after bare fallow. In comparison with some third crop before strong wheat in the system of crop rotation, the crude gluten content is higher by 1.5 to 2 percent; and the protein content, by 2.4 to 3 percent. On the farms in Turgay Oblast the area of bare fallow has increased to 500,000 hectares or 17.5 percent of the arable land. And specifically for this reason more strong wheat is grown here than in the other virgin-land oblasts.

The share of wheat within the grain acreage on virgin lands is 80 to 90 percent. While many different varieties of wheat were grown in the early 1960's, Saratovskaya 29 and Bezenchukskaya 98 are now the two dominant strong varieties, and Kharkovskaya 46 is the dominant hard variety. The better varietal structure, together with suitable cropping practices, has helped to improve the quality of commodity grain.

Fertilizers have played an important role. On the Rassvet Sovkhoz in Kustanay Oblast, for example, Saratovskaya 29 wheat succeeding a bare fertilized fallow not only yielded 2.7 quintals more per hectare, but also its gluten content increased by 1.4 percent; and its protein content, by 0.9 percent. According to the 1966-1981 data of the Kokchetav Agrochemical Laboratory, the protein yield per hectare after a bare fertilized fallow increased from 1.8 quintals (control plot) to 2.3 quintals. Wheat fields in North Kazakhstan are being treated with insignificant amounts of fertilizer (5 to 6 kilograms/hectare) at present. A further increase of the doses of fertilizer is one of the basic reserves for improving the quality of commodity grain.

As we very well know, the level of crop yields and the quality of agricultural commodities from crop production depend on the quality of the seed. But about 20 percent of the farms' acreage in the virgin-land oblasts is sown with noncertified seed. This is explained by the fact that the sovkhozes and kolkhozes are not being supplied with sufficient primary or secondary seed, for renewing or replacing their varieties. The existing organization of reproducing stock seed on each farm also is holding up the expansion of the production of high-quality commodity grain. This problem can be solved by organizing commercial seed production.

The quality of grain improves practically up to its full ripeness. According to A. A. Sozinov, a corresponding member of the VASKhNIL [All-Union Academy of Agricultural Sciences imeni Lenin], 91 to 95 percent of the gluten accumulates in the grain by the time it reaches its wax ripeness, and the remaining 5 to 9 percent is formed during the period of ripening. The overripening of wheat on the stalk reduces the quality of the grain. This is why it is essential to harvest bread grain within eight or nine days.

Research reports of the VNIIZKh [All-Union Scientific Research Institute of Grain Farming] show that, at an average wheat yield of 19.5 quintals [per hectare], harvesting the wheat at the end of its milky ripeness reduces the yield to 14.9 quintals; in its doughy stage, to 17.5 quintals; and at the start of wax ripeness, to 18.8 quintals. In the course of this, the quality of the grain changes. In 1981, for example, 1000 grains of Saratovskaya 29 wheat harvested in the middle of its wax ripeness stage weighed 39.5 grams, but for the same wheat harvested 20, 10 and 5 days earlier the weights were, respectively, 27.5, 34.1 and 36.5 grams. The gravimetric density of the wheat harvested in its optimal stage of ripeness was 824 grams/liter, but for the wheat harvested 10 and 5 days sooner it was, respectively, to 817 and 827 grams/liter.

Grain quality is influenced considerably by its timely postharvest processing, the further perfection of which will require the farms to concentrate their mechanized threshing floors at their main farmsteads. In the case of agro-industrial associations, however, the problems of the postharvest processing and storage of grain can be solved more efficiently by fully utilizing the capacities of the grain elevators and grain-receiving stations.

The sovkhozes and kolkhozes in North Kazakhstan now have thousands of threshing floors during the harvest. These floors range from makeshift solutions to highly mechanized complexes, each of which employs at least 10 people, half of them machine operators. A huge amount of material and technical resources is expended to ensure the work of these complexes, yet the level of their utilization is not always up to the set tasks.

At the same time, the grain-procuring organizations are equipped with highly productive and modern grain-cleaning machines that permit flow-line operation. The grain elevators and grain-receiving stations in the virgin-land oblasts of North Kazakhstan are able to dry in their dryers more than 500,000 tons of grain, and to clean about 3.5 million tons of grain in 24 hours. Utilization of these capacities, however, is far from complete. The reason is that the farms, fearing the loss of a proportion of their quality premiums, process the grain to specifications under their own, often very primitive, conditions. Many people are assigned to this processing and spend their valuable time on it. But the main drawback is that the mechanized threshing floors divert the attention of all services of a farm specifically during a labor peak. And this interferes with concentrating effort on the main task, on harvesting the crop within the short time available.

By reinforcing the physical plant and equipment of the grain-procuring enterprises, we believe, the farms should be freed entirely of the need to process grain on their threshing floors. Processing should be done at the grain elevators and the grain-receiving stations. Efforts should be made to deliver the grain directly from the combines to the elevators. And where the fields are at a considerable distance from the elevators, which is often the case on the virgin-land sovkhozes, there should be threshing floors or hard-surface areas as reloading points between the combine and the elevator, which would permit the more efficient organization of trucking.

The standards for the acceptance of grain must be reviewed. They must take into consideration first of all the biological merits of the grain (the

gluten and protein content), and also the technological characteristics to which the grain is processed at the elevator, using the latter's capacity. The elevator must return the removed waste to the sovkhoz or kolkhoz, but at prices that correspond to the actual costs, including certain expenditures of the grain-procuring organizations. This system has been introduced experimentally for all farms of Zhaksynskiy Rayon, and in ten different zones of Turgay Oblast.

Remuneration in crop production on the sovkhozes of North Kazakhstan is under a piece-rate wage plus bonus system, based on the volume of work and the obtained output. After determining the amount of the output, the earnings paid to workers during the year for fulfilling the output norms are deducted. The difference is the additional pay for the harvest. When the premiums for quality are taken into consideration, the amount of additional pay increases. On average for 1976-1980, on the farms in Turgay Oblast the additional pay for strong wheat amounted to 16.1 percent of the actual sales price; but on the Sovkhoz imeni Leninskiy Komsomol in the same oblast, to 23.4 percent. The additional pay is divided among the workers commensurately with the amounts of their earnings based on the rate schedule.

To link remuneration more closely to the quality of the produced grain, it is necessary to use a quality coefficient that reflects the ratio of the procurement price of ordinary wheat to the procurement price of strong or hard wheat. This coefficient may be used also in setting rates based on output.

The quality of grain varies not only by sovkhozes and zones, but also within the same farm. On the Dal'niy Sovkhoz in Turgay Oblast, for example, the differences (due to quality) in the sales prices per quintal of wheat in 1982 ranged from 0.02 to 1.15 rubles among the tractor and field-cultivation brigades. The procurement organizations, however, usually determine the quality for the farm as a whole, by averaging the samples taken at delivery. As a result, the workers of the tractor and field-cultivation brigades and departments do not get the remuneration to which they are entitled, and thus do not have any incentive to improve the output. Consequently, the planning of the amount of the surcharge for quality, and its determination in a breakdown by the subdivisions of a farm are an important reserve for giving graingrowers more incentive based on the results of their work.

The accounting of grain quality on the farms themselves is extremely inadequate. Only one indicator of grain quality is included in the annual report: the subquality deduction or the quality premium. All the other indicators of grain quality are determined by organs that do not have any direct influence on production. Not even the statistical organs report systematically the indicators of grain quality.

Perfection of the system of procurement prices is one of the principal factors aimed at improving the economic efficiency of the branch. The system that has evolved to date for determining the value of wheat as a function of its quality provides a strong incentive for improving the economic efficiency of the branch. Since 1968, grain production on the farms of North Kazakhstan has been persistently profitable and is earning considerable net income (on average, 65 to 70 percent of all annual income). The sovkhozes in the virgin-land oblasts

alone earned a net profit of 1.4 billion rubles on wheat sales under the 8th, 2.1 billion under the 9th, and 2,7 billion under the 10th Five-Year Plan. The average sales price per quintal of grain increased to 9.93 rubles* under the 10th Five-Year Plan, which is 8.7 percent more than under the 9th Five-Year Plan. It could have been even higher if the farms had been able to eliminate the losses due to the deterioration of quality. In 1976-1980, the losses due to subquality deductions (less quality premiums) amounted to more than 1.674 million tons (including 706,500 tons in 1979 alone) or 2.4 percent of the actual weight of the grain sold to the state. The level of subquality deductions was particularly high in 1977 and 1979 (5.2 and 3.8 percent). In 1979, due to extremely complicated weather conditions, the heaviest losses were sustained by the farms in Kokchetav and North Kazakhstan oblasts, where the level of subquality deductions reached, respectively, 7 and 10 percent.

An analysis of wheat prices clearly shows that in individual years the influence of grain quality (strong wheat, hard wheat, valuable wheat varieties) on the price level is on the whole insignificant. For example, better quality increased the average sales prices of wheat by only 4.7 percent in 1971, 9.3 percent in 1973, 8.2 percent in 1979, and 7.8 percent in 1981. The effect of grain quality on the economic efficiency of its production is clearly evident from the structure of the sales prices on the republic's sovkhozes (see table).

Structure of the Average Mid-Year Sales Price per Ton of Wheat in 1971-1980

Price structure	1971-1975		1976-1980	
	Rubles	Percent of total	Rubles	Precent of total
Delivery price	72.20	79.8	80.00	75.0
Premium for:				
Variety	2.08	2.3	1.53	1.4
Hardness	18.00	19.9	25.14	23.5
Strength	0.45	0.5	0.94	0.9
Charges for drying and cleaning	1.38	1.5	0.88	0.8
Deductions less premiums	0.85	0.9	0.13	0.1
Sales price per ton	90.50	100	106.60	100

In our opinion, however, the shortcomings of the system of pricing are seriously hampering the possibilities of increasing the production and procurement volumes of high-quality wheat. Within the volume of wheat procured under the 10th Five-Year Plan in Tselinograd Oblast, for example, the share of strong wheat sold at a 50-percent premium was 9.4 percent, but that of hard wheat was only 0.7 percent. (Even in 1976, the best year, their shares were, respectively, 34.7 and 1.9 percent.) At the same time, many of the farms did not get the 50-percent premium for strong wheat. With the introduction in 1968 of the new standard for hard and strong wheats, and of a new schedule of quality premiums, the proportion of premiums even declined somewhat in comparison with 1966-1967, when the old state norms were in effect. This is due to the fact that most (over 76 percent) of the procured strong wheat contains 28 to 31 percent crude gluten, which qualified for a 40-percent premium earlier, but now qualifies for only a 30-percent premium.

*Here and hereinafter, we exclude from the proceeds the 50-percent premium, in order to eliminate the effect that deliveries in excess of the plan would have on the price level and profitability.

It should also be noted that currently the rates of the premiums, especially of the ones for strong wheat, show sharp and unwarranted variations. For example, the 30-percent premium is paid for strong wheat that has a gluten content of 28 to 31 percent; in other words, the rate of the premium is the same although the gluten content varies within 3 percentage points. The 50-percent premium is paid for a gluten content of 32 percent or more. As a matter of fact, for an unlimited gluten content above this level, the premium rate does not change. Such a system does not provide sufficient incentive for the farms to strive to improve grain quality. It is all the same to the farms whether the grain they sell contains 28 or 31, respectively 32 or 37 percent gluten.

In our opinion, it would be appropriate to raise the procurement prices for every percentage point of the gluten content's rise above the basic quality requirement, so long as the technological and breadmaking properties of the wheat continue to improve. And the monetary premiums should be set in a certain percentual ratio for wheats of gluten groups I and II, and lower for group III.

Standardization plays an important role in the set of measures for ensuring the production of grain of high quality. In spite of some progress in this matter,* the standards now in force have a number of shortcomings. It is a known fact, for example, that protein is the most valuable grain constituent. But the protein content does not play any role in determining the standard weight of the grain, even though it determines the utility value of the grain in the same manner as, say, the butterfat content determines the utility value of milk. Consequently, it would be expedient to determine the standard weight not only on the basis of the physical properties of the grain, but by taking into consideration also its protein content (in the same manner as this is being done, for example, with the oil content in the case of sunflower seed, or the sugar content in the case of sugar beets). This could be done by setting a base level of the protein content in grain, for specified zones of the country, republic, region or oblast. Then the procurement price of wheat could be allowed to vary as a function of the wheat's content.

Significant shortcomings have been found in the organization of grain procurement. We have in mind the evaluation of grain quality at the grain-receiving enterprises that employ obsolete small-scale and inaccurate methods. In determining the content and quality of the gluten, for example, the time of its elution, pressing and drying is not specified. Different laboratories perform the elution in different ways, which influences the results of the analysis and deprives the farms of substantial quality premiums.

Studies during the 1982 harvest at the Surganskiy, Yesil, Akralyk and Priishimskiy grain elevators in Turgay Oblast showed variations of up to ±2 percent when the three laboratory technicians of each elevator prepared manually the final evaluation of the quality of the same daily sample. Therefore the

*As of 1967, new standards have been approved for strong wheat and hard wheat. These standards are based on the indicators that determine the value of the grain for breadmaking: its gluten content and gluten quality. The state standards introduced prior to 1972 have been reviewed; and the branch standards, republic technical specifications, and technical specifications have been updated.

state standards must specify in greater detail the conditions for determining quality. It is also necessary to employ instrumental methods as widely as possible, e.g., the MOK instrument for the elution of gluten. It is being used at present only in seven oblasts in the USSR, including five oblasts of North Kazakhstan. Regrettably, the large-scale production of this device is being held up for some reason.

Many of the quality indicators (color, smell, external appearance) are determined organoleptically and often depend on subjective perception.

Practice and the data of the scientific research institutions show that strong wheat differing only slightly from the color specified in the standard is being used to improve other wheat. This is not reflected in the technological properties of the wheat. In the oblasts of North Kazakhstan, grain is often harvested under unfavorable conditions and, because of this, the grain loses its normal color. But the standard does not provide for the acceptance of such grain by the grain-receiving enterprises as high-quality grain, even though the other indicators (the main ones!) of the same grain are high.

Unnecessary complexity and, in the case of some of the indicators, excessive rigidity make the standards difficult to meet, which undermines the confidence of the farms in the possibility of obtaining the appropriate premiums, and thereby weakens the incentive to increase the procurement of strong and hard wheats. For example, the indicators of weeds and moisture content should be excluded from the state standard, because the gravimetric density increases after cleaning and drying. The grain-receiving enterprises may deduct the cost of processing from the value of the wheat.

The standard sets identical specifications for grain grown anywhere in the USSR, whereas grain grown under different climatic and soil conditions gives a product differing in its utility characteristics. Even in the virgin-land region of North Kazakhstan grain quality improves as we go from north to south and from east to west. Therefore the need arises to constantly manipulate the basic and limiting quality requirements for grain. It is expedient to elaborate zone standards differentiated according to climatic and soil conditions. First of all, this would permit the intensification of specialization and the greater concentration of the production of strong wheat, locating the wheat fields in the zones most suitable for it. Secondly, the rates of the quality premiums could be differentiated with due consideration for the climatic and soil conditions. Thirdly, in the differentiation of the prices it would be possible to take into consideration not only the average production cost in the individual zones, but also the differences in the quality of the grain.

One of the most important means that influence the intensification and greater efficiency of grain production, and the improvement of grain quality as well, is the application of collective contracts. The multiyear practice of the farms in North Kazakhstan shows that, under otherwise identical conditions, such brigades and production teams consistently produce more at less cost, their productivity is higher and labor discipline better, and consequently their return on investment is far more favorable. The main role in this is played by incentives that are based not on the volume of work performed, but on the profit.

All the factors that we have discussed in conjunction with improving grain quality and the economic efficiency of grain production cannot be investigated simply, nor can they function independently of one another in the system of material-technical, organizational and economic relations. The main task when organizing production is to get them to function jointly in the same direction and subordinated to the same objective: that of obtaining the maximum output of high quality, on the basis of farm production's intensification, by utilizing the achievements of scientific and technological progress.

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TILLING AND CROPPING TECHNOLOGY

IMPORTANCE OF CORN TO UKRAINIAN GRAIN CROP PROGRAM

Kiev PRAVDA UKRAINY in Russian 24 Jan 84 p 1

/Lead article: "Grain Fields of the Republic"/

/Text/ Although winter is just now beginning to display its true character and although snowfalls and drifting snow still lie ahead, nevertheless the grain growers are thinking about the forthcoming spring and the future harvest. The fate of the harvest no longer depends upon the caprices of nature to the same degree that it did in previous years. Nevertheless a farmer, even one who is equipped with modern knowledge and has at his disposal a powerful technical arsenal and a broad range of agricultural crop varieties that are resistant against many unexpected eventualities, must take into account and foresee all of the factors involved in his work. And it follows that he must be able to combat undesirable influences. This is the thrust of the decree handed down during the December Plenum of the CPSU Central Committee, in which it is stated: "To constantly intensify the efforts of workers attached to the agroindustrial complex with regard to carrying out the USSR Food Program and raising the cropping power of the fields and the productivity of animal husbandry."

Certainly the chief concern of the agricultural workers is their grain. Indeed, as emphasized in the country's Food Program, accelerated and stable grain production is a key problem in agriculture. And the thoughts and efforts of each worker in the agroindustrial complex must be directed towards achieving a successful solution for this problem.

"Here we are speaking mainly about raising the stability of farming and implementing a comprehensive program aimed at increasing the production of grain" stated Comrade V.V. Shcherbitskiy during the January Plenum of the Central Committee of the Communist Party of the Ukraine, "A clear determination must be made in all areas as to exactly what is needed in each rayon and oblast and on each farm. Thereafter, with the local conditions being taken into account, action should be taken to ensure the gross grain yield planned for this year."

Such work has been carried out successfully by workers in Volnovakhskiy Rayon in Donetsk Oblast, whose obligations with regard to increasing the production and sale of grain to the state are printed in today's issue of the newspaper. Relying upon a scientifically sound system of farming and the use of progressive

technologies for the cultivation of grain crops and introducing the use of collective contracts on an extensive scale, the rayon's farmers vowed to obtain 31.9 quintals of grain from each of 67,700 hectares.

Many such examples of a patriotic attitude towards the carrying out of important work could be cited. They are convincing -- this year the workers attached to the agroindustrial complex are striving to raise the return from a hectare of grain and to please the homeland by obtaining high yields for all crops.

One important reserve for increasing grain production, as noted during the Plenum of the Central Committee of the Communist Party of the Ukraine, is that of expanding the areas of corn and employing the industrial technology in the cultivation of this crop. This crop once again demonstrated its great potential last year, a year which was extremely complicated from the standpoint of weather. Notwithstanding a very dry summer, the gross yields of corn were even somewhat higher than those for 1982. To repeat or even surpass the level already achieved is a task not only for the corn growers. The efforts of the farm leaders and specialists must also be directed towards successfully solving this task.

This year the republic's grain crop areas will exceed 2.5 million hectares. Moreover, up to 1,800,000 hectares, or almost one third, will be used for cultivating corn in accordance with the industrial technology. On irrigated lands and also in the northern and western oblasts of the republic, the sowing of corn for grain will be carried out to a greater degree using early-ripening hybrids and incrusted seed. The plans also call for an increase in the sowings of silage corn, which will be grown using the grain technology. This will make it possible, when necessary, to harvest it for grain and to augment the forage supplies.

As you can see, the program for this crop is vast and important. And Dneprpetrovsk Oblast serves as an example of how this program can be implemented in a comprehensive manner and on an extensive scale. A broad spectrum of measures has been developed in the oblast aimed at increasing the sowings of corn and raising its cropping power in the interest of obtaining 1 million tons of grain annually.

The Dneprpetrovsk farmers are approaching this cherished goal in real earnest this year. They are receiving fine practical assistance in this regard from the collective at the Dnepr Scientific-Production Association, created at the All-Union Scientific-Research Institute of Corn. This included the programming of yields, especially on irrigated lands, and the introduction of new and highly productive hybrids, a comprehensive system for protecting plants from pests, diseases and weeds and new methods for tilling the soil and tending the crops.

In the interest of obtaining high yields, serious measures have been undertaken in many directions. The agrochemical services have regulated the structure of the areas under crops on all of the farms and they are using the best predecessor crop arrangements in behalf of the corn. Since autumn, all of the fields have been given a good fertilizer top dressing and plowed.

The corn cultiavtion work is being carried out by 550 mechanized detachments, all of which are operating on the basis of contracts. The leaders of these collectives, farms and rayon agricultural administrations are taking training courses and becoming recertified on the basis of special programs. At the present time, the inspection and repair of equipment in all areas is under the strict control of the local party organs and the production of attachments and implements which improve the working efficiency of the corn growers is being organized.

The fine example set by the workers in Dneprpetrovsk Oblast is being followed by the farmers in Kirovograd Oblast. In 1984 they plan to obtain more than 900,000 tons of corn grain and thereafter to raise their annual yields also to 1 million tons. Two principal factors will make it possible to reach this goal. First of all, a considerable increase in the grain corn sowing areas and, secondly, and this is especially important -- an increase in the cropping power.

The estimates of the farmers in Kirovograd Oblast are based upon a strong logistical foundation. In the autumn the land was plowed in a timely and high quality manner, with 30-40 tons of organic fertilizer applied to each hectare. Within the oblast, 2,500 specialized teams operating on the basis of collective contracts have been created. These teams have been assigned areas and the necessary equipment. A considerable amount of work is being carried out in connection with the additional production of soil cultivation implements and wide-cut units for applying herbicides. A group of machines and mechanized lines are being prepared for placing damp grain in storage. The grain growers are being assisted in this regard by their partners in the agroindustrial complex and also by their patrons -- the collectives of industrial enterprises.

Programs for increasing the production of grain, particularly corn, have also been planned for the republic's remaining oblasts. But by themselves they will produce no results if they are not reinforced by thoughtful organizational work being carried out literally in all directions -- commencing with the introduction on an extensive scale of a soil-protection and moisture-retaining technology for working the land and expanding the sowings of new regionalized varieties and ending with an increase in the responsibility of the kolkhoz and sovkhoz leaders and specialists. And this entire complex of problems must constantly be under the observation of the local party and soviet organs and the councils of the oblast and rayon agroindustrial associations.

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TILLING AND CROPPING TECHNOLOGY

UKRAINIAN PROGRAM FOR RAISING CROPPING POWER OF CORN

Kiev PRAVDA UKRAINY in Russian 27 Mar 84 p 3

/Article by A. Denisenko, deputy minister of agriculture for the Ukrainian SSR: "School for Grain Growing Expertise"/

> /Excerpts/ Three years ago, following the example of the eminent machine operators Hero of Socialist Labor and USSR State Prize Laureate A.Ye. Mardarya of the Kolkhoz imeni Tatarbunarskoye Vosstaniye in Tatarbunarskiy Rayon, Odessa Oblast and L.S. Bronovitskiy of the Kolkhoz imeni Kalinin in Pervomayskiy Rayon, the Crimean Oblast, the leaders of 40 mechanized detachments and teams concluded collective agreements on the pages of the newspaper PRAVDA UKRAINY for a socialist competition to be conducted under the slogan: "The field of a neighbor is not an alien field." Together with their collectives, they pledged themselves and they called upon all machine operators engaged in cultivating corn using the industrial technology to join in the campaign to obtain no less than 100 quintals of dry grain of this valuable grain forage crop from each assigned hectare of irrigated land and 60-70 quintals from each non-irrigated hectare.

In noting with satisfaction the labor successes achieved by the masters of the corn fields, it bears mentioning that this represents only the beginning of a great amount of work aimed at further improving collective tutorship over one of the most effective forms for overcoming the differences in cropping power which are being observed in all of the corn growing zones. Unfortunately, not all of the mechanized detachments or teams are making full use of the advantages offered by the industrial technology or the potential possibilities of corn. Nor have they mastered the secrets of the leading machine operators and, as a result, they are not realizing a proper return from the labor and resources being invested in the work. For some of them, last year was no exception. With strict observance of technological discipline, the carrying out of the entire complex of operations in a timely and high quality manner and with daily and practical assistance being furnished by the specialists, the indicators for the competing corn growers in Kirovograd, Chernigov, Vinnitsa and other oblasts could be considerably higher.

During a recent republic scientific-production conference held in the city of Dneprpetrovsk, emphasis was placed upon the fact that the current year must serve as a turning point in the production of corn grain. The task consists of doubling the gross yield. Just as in the past, the prinicpal means is that of raising the cropping power. At the same time, one reliable reserve is that of expanding the sowings of this crop and employing the industrial technology, which under last year's dry conditions produced a yield in excess of 36 quintals and on farms in Volyn Oblast -- 87, Chernovitsy and Rovno oblasts -- 61-63, Ivano-Frankovsk, Trans-Carpathian and Lvov oblasts -- 52-58 quintals of grain per hectare.

The kolkhozes and sovkhozes in Dneprpetrovsk Oblast are increasing their corn fields considerably through the creative use of accumulated experience. In view of the oblast's increasing volumes, a great amount of laborious preparatory work has been carried out -- the detachments and teams were staffed in a timely manner, crop rotation plan fields were assigned to their care, logistical resources were allocated and technological charts were prepared and delivered to those responsible for carrying out the work. And most important, all of the machine operators, under the direction of experienced specialists, mastered the peculiarities involved in the operation and technological adjustment of the complicated corn growing equipment and particularly the adjustments for the SUPH-8 precision sowing machine. Here collective tutorship is not limited to small groups but rather it is acquiring new forms. For example, the All-Union Institute of Corn undertook to provide support for 100 farms and vowed to provide them with methodological and practical assistance in obtaining high yields based upon the introduction of scientific achievements and leading experience. They weighed their potential and are expanding noticeably their sowings of corn in Odessa, Kherson, Kirovograd, Kharkov, Nikolayev and other oblasts.

At the present time, the corn growers have at their disposal all that is needed for obtaining their planned yields. They have highly productive equipment, with each passing year the deliveries of mineral fertilizers and herbicides are increasing and improvements are being realized in the issuing of moral and material incentives. Corn production is being carried out on an industrial basis in a planned manner. This year alone, two thirds of the sowing areas will be cultivated using the industrial technology.

The problem is now one of ensuring that all of the technological processes are carried out in a timely and high quality manner commencing with the very first days of the spring field work, as is being done by the leading collectives. The strict observance of the agrotechnical requirements will make it possible to reduce the effect of unfavorable factors on the productivity of the fields. The machine operator corn growers bear a great amount of responsibility for the fate of the harvest. They must endeavor to obtain a high yield from each field and furnish assistance to the collectives in carrying out their obligations.

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TILLING AND CROPPING TECHNOLOGY

GRAIN PRODUCTION INCREASE PLANNED FOR ODESSA OBLAST

Kiev PRAVDA UKRAINY in Russian 12 Jan 84 p 2

/Interview with V.K. Shcherbakov, 1st deputy chief of the oblast agricultural administration, by correspondent A. Belous; date and place not specified/

> /Text/ The farmers in Odessa Oblast, in supporting the initiative displayed by the grain growers in Denprpetrovsk Oblast, have also decided to strive to achieve 1 million tons of grain corn.
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> In this article the 1st deputy chief of the oblast agricultural administration, V.K. Shcherbakov, discusses with our correspondent A. Belous the actions that are being taken in the interest of achieving this planned goal.

/Question/ Vasiliy Kirillovich, Odessa Oblast has always been considered to be a tradtional corn region. But in recent years the corn yields here have decreased. And suddenly there has been a sharp change. What plans do you have and how can the situation be corrected?

/Answer/ Truly, considerable reductions in the yields for this valuable forage crop have taken place recently in our oblast, where there are many well known expert corn growers. There are many reasons for this: there is the problem of failing to evaluate properly the best experience, a noticeable reduction in the areas and many others. But the chief reason -- in a number of rayons, there has simply been a reduction in the amount of attention being given to corn, where it is viewed as being a secondary crop. Even in Kotovskiy Rayon, renowned for its twice-decorated Hero of Socialist Labor Ye.V. Blazhevskiy, nobody is continuing his work today. And the corn growers in Izmailskiy, Kodymskiy, Saratskiy and some other rayons have forfeited their former glory.

On many farms, especially in the northern and central rayons of the oblast, use has been made of late ripening foreign-bred hybrids which have not always produced the return expected of them.

Once again, years marked by unfavorable weather conditions have convinced us that corn does not disappoint true experts at cultivating this crop, even under

extreme conditions. For example, during the last and most difficult year of the past decade, the teams of A. Mardar' at the Kolkhoz imeni Tatarbunarskoye Vosstaniye, N. Raznikin at the Pravda Kolkhoz in Tatarbunarskiy Rayon, P. Dribnokhod of the Ukraina Kolkhoz and A. Vyshenko of the Kolkhoz imeni Michurin in Kiliyskiy Rayon and some others undertook to obtain 100 and more quintals of grain per hectare under irrigation conditions. More than 50 quintals of corn grain were obtained under non-irrigation conditions at the kolkhozes Pravda in Baltskiy Rayon and Mayak in Krasnooknyanskiy Rayon. Thus there are those whose example should be followed. Therefore, the task has been assigned: to study and introduce the experience of leading workers in all areas and to make this experience available to all, such that this year there will be a sharp increase in the gross yields of corn.

/Question/ And what measures are being undertaken in this regard?

/Answer/ First of all, the decision has been made to acquaint not only the RAPO /rayon agroindustrial association/ leaders and specialists but also the party and soviet workers at the rayon level with the leading experience accumulated in the cultivation of corn using the industrial technology and also with the principles for organizing labor on a contractual basis in the teams and detachments. Towards this end, courses based upon exercises and a 40 hour program have been created at the oblast agricultural experimental station.

Training has also commenced in the rayon schools for corn growers and in the agricultural societies of farms. All of the chiefs of detachments and teams must undergo appropriate retraining at support farms in the cultivation of corn, where they also exchange practical experience. Corn cultivation teams and detachments have already been formed in all of the rayons. Their structures have been approved by the farm administrations and their leaders -- by the bureaus of the rayon party committees. This year corn will be grown by 900 mechanized collectives. They have all concluded contractual agreements and this provides additional stimulus in the campaign to raise the cropping power of corn.

/Question/ What yields are they striving to achieve?

/Answer/ Recently the corn growers in Baltskiy Rayon initiated an oblast competition to obtain 50 quintals of grain per hectare. Their initiative is being followed in Belgorod-Dnestrovskiy, Kiliyskiy, Tatarbunarskiy, Artsyzskiy and other rayons. Unfortunately, for various reasons by no means are all of the rayons capable of achieving this goal. Thus we have assigned the task -- to obtain no less than 40 quintals of grain from each non-irrigated hectare and under irrigation conditions -- not less than 70 quintals. This is the goal of the winter training being carried out at all levels and other measures being implemented in the various areas.

/Question/ Could you please give us some greater details on this subject?

/Answer/ For example, let us take Kominternovskiy Rayon. last year the detachment of State Prize Laureate of the UkSSR N. Dovbenko, under severe drought conditions, obtained 37 quintals of grain from each of 500 hectares from non-irrigated land. On neighboring farms the yields were considerably lower. It turned out that the sowings were severely crowded in those areas where only small quantities of organic material were applied and where many

mistakes occurred during the pre-sowing cultivation of the plantations. In order to prevent such mistakes from occurring, all of the farms in the rayon are displaying increased concern for ensuring that organic material and mineral fertilizers are applied to the soils. The kolkhozes and sovkhozes are making a device for applying herbicides in response to a recommendation by the chief of a mechanized detachment at the Kominternovskiy Poultry Factory A. Kravchuk. All of the corn plantations will be given a top dressing of anhydrous ammonia.

Or let us take Kiliyskiy Rayon. Here there is a large amount of irrigated land. But whereas the kolkhozes Ukraina and Druzhba are obtaining an average of 70-75 and even 100 quintals of corn grain per hectare, at the Rodine Kolkhoz and some other farms -- only 18-25 quintals. The leading farms and their experienced teams are furnishing assistance to their neighbors in reaching their planned cropping power and they are accomplishing a great deal in this regard. Many similar examples can be found in other rayons throughout the oblast.

I wish to emphasize that in the autumn many of our machine operators and agronomists visited their colleagues in Dneprpetrovsk Oblast for the purpose of drawing upon their valuable experience, which they will now put to use.

/Question/ Can it be assumed that in the campaign to achieve a high yield the rayon's corn growers are receiving the required assistance from the scientists?

/Answer/ I have already mentioned the scientists at the oblast's agricultural experimental station. In addition, the station's workers will conduct practical seminars on the work stages to be carried out on the corn fields. A demonstration site with a complete set of equipment for the industrial technology for cultivating corn is being prepared at the station. Two traveling classrooms will also be formed for paying visits to the oblast's rayons.

The scientists at the All-Union Breeding and Genetics Institute have developed recommendations for planting high quality and hybrid corn in various zones throughout the oblast. Many of the institute's workers will become public inspectors for corn cultivation and as such they will render specific assistance in the various areas.

/Question/ Compared to last year, the oblast's corn fields are being expanded by almost twofold. And there are many who are concerned regarding one particular question at the present time: how can the crops be harvested without losses? What can be done to protect them?

/Answer/ Beyond any doubt, this is not a simple problem. First of all, the areas assigned for early ripening hybrids are being increased in size. This will make it possible to commence the harvest work earlier and also to prepare the soil for the winter crops in a timely manner. We also consider it advisable to harvest approximately 30 percent of the corn when there is a high moisture content in the ears and to mill them and place them in containers. The modernization and construction of lined storehouses have commenced at the kolkhozes and sovkhozes. We are expecting to receive assistance in this regard from supporting organizations in the city. We are also saving a portion of the

collapsed grain through the use of PPK-4 attachments -- this storage technology is well known. But very few grain combine attachments are available in the oblast. In view of the existing situation, it is hoped that we will be furnished with assistance in procuring them.

The condition of the harvesting and drying equipment is presently being inspected on all of the farms and repair work has commenced on the corn harvesting combines. The work is being coordinated by the rayon agroindustrial associations.

The oblast's corn growers are doing everything possible to ensure that they are fully prepared for the forthcoming spring period. Commencing with the very first days of the spring field work, they will be participating in the campaign to obtain 1 million tons of corn grain.

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TILLING AND CROPPING TECHNOLOGY

REASONS FOR INCREASED CORN PRODUCTION IN VOLYN OBLAST DISCUSSED

Minsk SEL'SKAYA GAZETA in Russian 17 Apr 84 p 3

/Article by M. Dorofeyuk, A. Knizhnikov and V. Sharov, senior scientific workers at the Brest Oblast State Agricultural Experimental Station: "Example of Workers in Volyn Oblast"/

/Text/ At kolkhozes and sovkhozes in Volyn Oblast in the Ukrainian Oblast, which has Brest Oblast as its neighbor, corn has become a leading forage crop. Last year it was grown on 73,700 hectares, including for grain on 4,100 hectares. This amounts to 12 and 0.7 percent of the arable land respectively. And here is the result: for the oblast as a whole, 74.5 quintals of valuable grain were obtained per hectare.

The underlying reasons for this success are discussed below.

The farms in Volyn Oblast have been growing corn for grain since 1981. At the same time, state statistical accounting was introduced for the areas, gross yields and crops. Over the past 3 years the sowing area for corn for grain has been increased from 1,152 to 4,079 hectares. Whereas in the beginning this work was carried out only in four rayons and mainly in Gorokhovskiy Rayon, last year corn for grain was grown in as many as 12 out of 15 rayons. This year the plans call for the areas to be increased twofold and for all rayons and farms to engage in this work.

The highest grain yield -- 92 quintals per hectare -- was obtained in Gorokhovskiy Rayon, where chernozem soils are found on loess-like loam. But fine yields were also obtained in rayons which border upon Brest Oblast, rayons such as Lyuboml'skiy, Ratnovskiy and Starovizhovskiy.

If we view the yield as a whole in terms of feed units, taking into account the stalks used for silage, then the oblast achieved a yield of 85-105 quintals per hectare. Thus it is apparent that no other grain crop can compete against corn.

The oblast's farms sow only early ripening and mid-season ripening hybrids: TKh-20, BTs-183, KVS-701, KVS-713, Moldavskiy-257, Dnepropetrovskiy-247,

Kollektivnyy-11, Bukovinskiy-11. The growing season for the hybrids is no more than 100-115 days. Special attention is being given to the sowing periods. The sowing commences when the soil temperature at a depth of 10 centimeters reaches plus 5-7° Centigrade. Practically all of the grain areas are sown prior to the end of May. The depth of seed placement is 3-4 centimeters. Water-proofing of the seed is not carried out. It is replaced by incrustation. This requires use of the disinfectant Fentikuram in a dosage of 2 kilograms per ton of seed and film-forming preparations: polyvinyl alcohol, sodium salt, carboxy-methyl-cellulose and polyvinyl acetate. The effectiveness of seed treatment carried out in this manner is similar to water-proofing and yet work with the mentioned preparations is less dangerous to humans than is chloroform. The PS-10 seed treatment unit was re-equipped for the incrustation of corn seed.

The corn is sown with inter-row spacings of 70 centimeters. The density of the plant stand is 100,000 to 110,000 per hectare. Even on chernozem soils, no less than 60-80 tons of peat-manure compost and a ton of ammonia liquor are applied per hectare and also in accordance with the cartograms for phosphorus-potassium fertilizers -- 60-90 kilograms of the former and 90-150 kilograms of the latter.

When use is made of such effective herbicides as Eradikan and Lasso, the loosening of the inter-row spacings is generally not carried out.

Corn for grain is harvested by Niva combines with PPK-4 attachments or by Khersonets-7 combines. The Khersonets-200 combine is not suitable for the conditions found in the oblast, since it is a six-row unit used in the southern regions where the plant density is 40,000 per hectare. The thrashed grain is dried out on AVM drying units and when the moisture content is 20 percent or lower -- it is delivered to mixed feed plants.

Although Volyn Oblast is located to the south of Brest Oblast, nevertheless during last year's unfavorable weather conditions for corn the moisture content of the grain during the harvest was high and reached 30 percent. It became necessary to expend a great amount of labor and fuel in order to dry out the grain. Thus at the Kolkhoz imeni Voroshilov in Gorokhovskiy Rayon they converted over to the use of a new technology for conserving the corn grain. Following the harvest work carried out using a Khersonets-7 combine, the ears together with the husks were crushed on an ISK-3 mincing unit and placed in a trench, packed down firmly and covered with a plastic sheet. A concentrated feed was obtained which had a high edibility, a moisture content of 30-40 percent and a content of 0.6-0.7 feed units and 55-60 grams of digestible protein in each kilogram. The feed can be used for cattle and swine. According to data supplied by the Ukrainian Scientific-Research Institute of Animal Husbandry, the nutrient availability of silage obtained from corn ears is higher by 15-20 percent than that obtained from ensiling it together with the stalks without proper mincing.

During the preservation process, common salt is added at the rate of 10 kilograms per ton of feed or carboammonia salt in the same dosage. Milled grain stores very well even in the absence of these preservatives.

The decision has been made on many farms to convert over to the use of this method for the preparation and storage of corn grain. It is believed that this is the most acceptable method for processing the grain also for the conditions found in Brest Oblast.

The cultivation of corn for grain for forage purposes in Brest Oblast, especially in its southern rayons, holds great promise for the future. This is borne out not only by the experience of farms in Volyn Oblast, but also by studies carried out at the Brest Experimental Station and by strain testing conducted at the Stolin Strain Testing Station.

It has been proven that in order for the cultivation of corn for grain to be profitable, a yield of no less than 60 quintals per hectare must be obtained. Such have been the yields obtained at the 40 Let Oktyabrya Kolkhoz in Stolinskiy Rayon. However, during two-stage harvesting approximately one half of the ears end up in the leaf and stalk bulk or generally are lost and this lowers the results substantially.

Considering the conditions found in our oblast, a Khersonets-7 combine should be used for separating the ears out in the absence of thrashing. The ears should be minced on an ISK-3 unit and preserved using the method of the Kolkhoz imeni Voroshilov in Gorokhovskiy Rayon. The PPK-4 attachments for the Niva combine thrash the grain; however, during the process great losses occur owing to the presence of ears having a high moisture content.

It is believed that, in the form of experiments carried out on farms in the southern zone of our republic, it would not be excessive to sow corn for grain with the harvest being carried out during the phase of complete ripeness and with ensiling of the ears. Certainly, the number of farms and the overall area for sowing the corn for grain will be determined by the equipment available: Khersonets-7 combines and ISK-3 mincers. The minimal area for corn for grain at one farm in this zone must nevertheless be no less than 50-60 hectares in order to place in storage at each farm 400-600 tons of silage obtained from corn ears.

In short, the experience of the workers in Volyn Oblast is valued highly. It must be utilized in the best possible manner.

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FORESTRY AND TIMBER

COMBATING ROOT ROT IN BELORUSSIAN CONIFERS

Minsk SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 3, Mar 84 p 41

/Article by N.I. Fedorov, doctor of biological sciences and Yu.M. Poleshchuk, candidate of agricultural sciences: "Biological Campaign Against Root Rot"/

/Text/ The most widespread and most dangerous disease among coniferous plantings in the Belorussian SSR is root rot, caused by white agaric -- root fungus. The spores of the fungus, upon falling upon the stumps left over following improvement cuttings, sprout and start the formation of mycelium (spawn), which subsequently spreads to the roots of trees. Thereafter the spawn moves from the roots of sick trees to the roots of healthy ones, thus forming so-called "centers of dessication." Thus, in order to prevent the disease at the present time it is recommended that the surfaces of stumps of freshly cut trees in healthy pine forests be treated with various preparations (solution of urea, borax).

However the chemical method is not desirable since it leads to contamination of the environment. Recently, greater attention is being given to combating root rot, based upon an antagonism and competition between the saprotrophic (colonizing on dead wood) funguses and the causative agent of the disease. This method differs from the chemical method in that it is safe to use and does not contaminate the environment. Studies carried out by the Department of Wood Management and Forestry Protection of the Belorussian Technological Institute imeni S.M. Kirov have shown that among the wood destr ~ funguses which settle in stumps, tree-felling residues and wind-fallen wood, a strong antagonist and enemy of the causative agent of the disease is Peniofora Gigantskaya. Peniofora not only reliably protects the surface of stumps from their contamination by root fungus, but in addition it is capable of dislodging and driving it out of the stumps and roots.

Among the many types of this fungus, strains must be selected which differ in terms of a high degree of aggressiveness with regard to root fungus. A large number of strains of the antagonist were found and isolated into a pure culture; these strains were found in pine forests throughout the republic. The growth processes were studied under laboratory conditions and their antagonistic activity studied. More active strains possessing a high reproduction capability and capable of suppressing the development of root fungus were selected for further work.

The production of a biopreparation calls for the development of a peniofora mycelium in nutrient mediums. Towards this end, the components of the nutrient medium were selected, the optimum temperature-moisture conditions were defined and tests were carried out on the methods for concentrating the spore material, on the drying regimes and on the storage conditions for the biopreparation. A technology was developed for obtaining the biopreparation, which appears as a powderlike mixture of spores (powdery mildew) for a fungus and a carrier (sawdust, resin, quartz sand). This biopreparation is used for the preparation of a water suspension which is used for treating the stumps. The prophylactic treatment of stumps with a penifora powdery mildew suspension is carried out in the spring and autumn, when the average daily temperature is not less than 3-4° of heat. When stumps are colonized by a fungus-antagonist, the moisture content of the wood is of paramount importance. This is why this operation must be carried out during an improvement cutting or not later than 6-7 days following the commencement of such a cutting.

Experimental work carried out in pine groves on a number of forestry groves throughout the republic has revealed a high survivability rate for the peniofora (91-96 percent), which guarantees reliable protection of the stumps against infection by root fungus. Peniofora Gigantskaya is highly effective when combined with certain forestry measures and when employed for the localization (active campaign) of centers of root fungus in contaminated plantings.

The technology recommended for producing the preparation can be organized only at specialized laboratories; this will make it possible to convert over from small experimental operations to an experimental-industrial check upon the effectiveness of the biopreparation and subsequently -- to its more extensive introduction into forestry operations.

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